

# LBT-N455

## SERVICE MANUAL

*AEP Model*  
*UK Model*  
*E Model*  
*AUS Model*  
*PX Model*

- LBT-N455 is composed of following models.

As for the service manual, it is issued for each component model,  
then, please refer to it.

### COMPONENTS MODEL NAME FOR LBT-N455

COMPACT DISC DECK RECEIVER SYSTEM	HCD-N455
SPEAKER SYSTEM	SS-LB455

### SPECIFICATIONS

#### General

##### Power requirements

AEP, UK, German, Italian, East European models :  
220-230 V AC, 50/60Hz

Australian model :  
240V AC, 50/60Hz

Mexican model :  
120V AC, 60Hz

Other models :  
110-120V or 220-240V AC  
adjustable, 50/60Hz

##### Power consumption

AEP, UK, German, Italian, East European models :  
175W

Other models : 185W

#### Supplied accessories

AM loop aerial (1)  
Remote RM-SD50 (1)  
Sony SUM-3 (NS) batteries (2)  
FM wire aerial (1)  
Flat cord (1)  
Audio cords (4)  
Speaker cords (2)

Design and specifications are subject to change without notice.

COMPACT Hi-Fi STEREO SYSTEM  
**SONY®**

## PARTS LIST

### NOTE :

- Items marked " \*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

### • Abbreviations

G	: German model
IT	: Italian model
EE	: East European model
MX	: Mexican model
AUS	: Australian model
AR	: Argentine model

<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
-----------------	--------------------	---------------

### ACCESSORIES & PACKING MATERIALS

.....

1-501-374-11	ANTENNA, LOOP (INDONESIA PRODUCT)	
1-501-659-41	ANTENNA (FM) (E, MX, AR, AUS, PX)	
1-501-721-21	ANTENNA (LOOP) (MALAYSIA PRODUCT) (AEP)	
1-501-804-11	ANTENNA (FM) (AEP, UK, IT, EE)	
1-769-317-11	CORD, SPEAKER (RED/BLACK) (SS) (2.5m)	
1-775-458-11	CORD, SPEAKER (BLUE/BLACK) (SS) (2.5m)	
3-810-802-11	MANUAL, INSTRUCTION (ENGLISH) (UK)	
3-810-802-21	MANUAL, INSTRUCTION (INDONESIA PRODUCT) (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
3-810-802-31	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, IT)	
3-810-802-51	MANUAL, INSTRUCTION (GERMAN) (G)	
3-810-802-61	MANUAL, INSTRUCTION (ENGLISH, POLISH, RUSSIAN) (EE)	
3-810-803-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (E, AR, AUS, PX)	
3-810-803-21	MANUAL, INSTRUCTION (SPANISH) (MX)	
3-810-803-51	MANUAL, INSTRUCTION (MALAYSIA PRODUCT) (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
* 4-979-306-01	INDIVIDUAL CARTON (HCD) (AUS, PX)	
* 4-979-307-01	INDIVIDUAL CARTON (HCD) (E, MX, AR)	
* 4-979-309-01	INDIVIDUAL CARTON (HCD) (INDONESIA PRODUCT) (AEP, UK, G, IT, EE)	
4-979-371-01	COVER, BATTERY (for RM-SD50)	
* 4-979-431-01	CUSHION (BOTTOM) (HCD) (INDONESIA PRODUCT)	
* 4-979-431-11	CUSHION (BOTTOM) (HCD) (MALAYSIA PRODUCT) (AEP)	
* 4-980-140-01	CUSHION (UPPER) (HCD) (INDONESIA PRODUCT)	
* 4-980-140-11	CUSHION (UPPER) (HCD) (MALAYSIA PRODUCT) (AEP)	
* 4-980-310-01	INDIVIDUAL CARTON (SS) (AUS, PX)	
* 4-980-311-01	INDIVIDUAL CARTON (SS) (E, MX, AR)	
* 4-980-312-01	INDIVIDUAL CARTON (SS) (INDONESIA PRODUCT) (AEP, UK, G, IT, EE)	
* 4-980-685-01	CUSHION (SS)	
* 4-981-899-01	INDIVIDUAL CARTON (HCD) (MALAYSIA PRODUCT) (AEP)	
* 4-983-126-01	INDIVIDUAL CARTON (SS) (MALAYSIA PRODUCT) (AEP)	
8-917-537-90	REMOTE COMMANDER (RM-SD50)	

**Sony Corporation**  
**Consumer A&V Products Company**  
**Home A&V Products Div.**

9-960-549-11

English  
96B090480-1  
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# HCD-N455

## SERVICE MANUAL

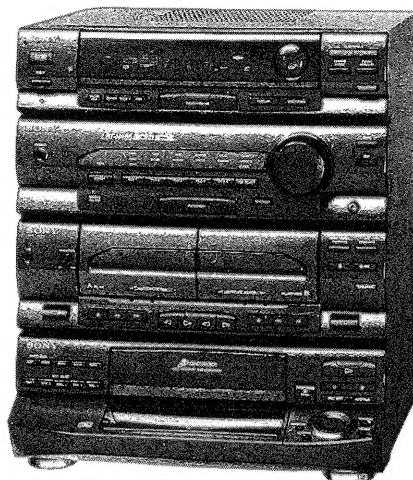


Photo : E model

HCD-N455 is the tuner, deck, CD and amplifier section in LBT-N455.

*AEP Model  
UK Model  
E Model  
Australian Model  
PX Model*

CD SECTION	Model Name Using Similar Mechanism	HCD-D270/G3100/N255
	CD Mechanism Type	CDM37-5BD19
	Base Unit Type	BU-5BD19
	Optical Pick-up Type	KSS-213BA/S-N
TAPE DECK SECTION	Model Name Using Similar Mechanism	HCD-N350
	Tape Transport Mechanism Type	TCM-220 WR2E

### SPECIFICATIONS

#### CD player section

System Compact disc and digital audio system

Laser Semiconductor laser  
( $\lambda = 780 \text{ nm}$ )  
Emission duration: continuous

laser output Max 44.6  $\mu\text{W}$ \*  
\* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Wavelength 780 – 790 nm

#### Tuner section

FM stereo, FM/AM superheterodyne tuner

#### FM tuner section

87.5 – 108.0 MHz  
(50 kHz step)

Aerial FM wire aerial

Aerial terminals 75 ohm unbalanced

Intermediate frequency 10.7 MHz

#### AM tuner section

Tuning range

German and Italian models:  
AM: 531-1, 602 kHz

AEP, UK, East European models:  
MW: 531-1, 602 kHz  
LW: 153-279 kHz  
(with the tuning interval set at 3 kHz)

Other models:  
AM: 531 – 1,602 kHz  
(with the AM tuning interval set at 9 kHz)  
530 – 1,710 kHz  
(with the AM tuning interval set at 10 kHz)

Aerial AM loop aerial  
External aerial terminals

Intermediate frequency 450 kHz

— Continued on next page —

COMPACT DISC DECK RECEIVER  
**SONY**<sup>®</sup>



### Tape player section

Recording system  
4-track 2-channel stereo

Frequency response  
(DOLBY NR OFF)  
40 – 13,000 Hz ( $\pm 3$  dB), using  
SONY TYPE I cassette  
40 – 14,000 Hz ( $\pm 3$  dB), using  
SONY TYPE II cassette

Wow and flutter  
 $\pm 0.15\%$  W.Peak (IEC)  
0.1% W.RMS (NAB)  
 $\pm 0.2\%$  W.Peak (DIN)

### Amplifier section

AEP, UK, German, Italian, East European  
models:

Peak music power output:  
(40 W + 40 W)  $\times$  2 (6  $\Omega$  at 1 kHz,  
0.7% DIN)

Continuous RDS power output:  
(50 W + 50 W)  $\times$  2 (6  $\Omega$  at 1 kHz,  
10% THD)

Music power output:  
(80 W + 80 W)  $\times$  2 (6  $\Omega$  at 1 kHz,  
10% THD)

Other models:

Peak music power output:  
1,200 W (6  $\Omega$  at 1 kHz, 10%  
THD)

Continuous RMS power output:  
(40 W + 40 W)  $\times$  2 (6  $\Omega$  at 1  
kHz, 10% THD)

Inputs

PHONO (phono jack):  
Sensitivity 3 mV, impedance  
47 kilohms

VIDEO (AUDIO) (phono jack):  
Sensitivity 250 mV, impedance  
47 kilohms

MIC (phone jack): (E, Australian, Mexican, PX,  
Aregentine model)  
Sensitivity 1 mV, impedance  
10 kilohms

Outputs

PHONES (phone jack):  
accept headphones of 8 ohms or more

(FRONT ) SPEAKER: accept impedance of  
6 to 16 ohms

SURROUND SPEAKER:  
AEP, UK, German, Italian, East European,  
Mexican models:  
accept impedance of 16 ohms

Other models:  
accept impedance of 8 to  
16 ohms

SUPER WOOFER :  
AEP, UK, German, Italian, East European  
models: accept impedance of 16 ohms

Other models:  
accept impedance of 6 to  
16 ohms

### General

Power requirements  
AEP, UK, German, Italian, East European models:  
220-230 V AC, 50/60 Hz  
Australian model:  
240 V AC, 50/60 Hz  
Mexican model:  
120 V AC, 60 Hz  
Other models:  
110 - 120 V or 220 - 240 V AC  
adjustable, 50/60 Hz

### Power consumption


AEP, UK, German, Italian, East European  
models: 175 W  
Other models: 180 W

### Dimensions

Approx. 355  $\times$  425  $\times$  400 mm  
(14  $\times$  16  $\frac{3}{4}$   $\times$  15  $\frac{3}{4}$  inches) (w/h/d)  
incl. projecting parts and controls

### Mass

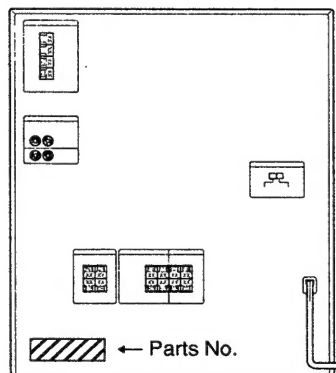
Approx. 11.8 kg (26 lb)

\* Dolby noise reduction manufactured  
under license from Dolby Laboratories  
Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories  
Licensing Corporation.

Design and specifications subject to change  
without notice.

### MODEL IDENTIFICATION

— BACK PANEL —



MODEL	PARTS No.
N455 : AEP model	4-978-191-2□
N455 : German model	4-978-191-3□
N455 : Italian model	4-978-191-4□
N455 : UK model	4-978-191-5□
N455 : East European model	4-978-191-7□
N455 : E model	4-978-192-0□
N455 : Argentine model	4-978-192-1□
N455 : Australian model	4-978-192-2□
N455 : PX model	4-978-192-3□
N455 : Mexican model	4-978-192-4□



### CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

### Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

### Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

**CLASS 1 LASER PRODUCT**  
**LUOKAN 1 LASERLAITE**  
**KLASS 1 LASERAPPARAT**

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION	: INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.
ADVARSEL	: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTIINA LASERSÄTELYLLE.
VARNING	: LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URÖPPNAD.
ADVERSEL	: USYNLIG LASERSTRÅLING NÅR DEKSEL ÖPNES. UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

### SAFETY-RELATED COMPONENT WARNING !!

**COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

## SERVICING NOTE

### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

### NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

### [FL Display Tube, LED All Lit and Key Check mode]

When the **TUNER/BAND**, **DISPLAY/DEMO**, and **FILE 2** buttons are pressed simultaneously, the FL display tube and LEDs will all light up. Press any button to enter the key check mode.

When the key check mode is entered, the FL display tube displays "K1 J0 V0". Each time a button is pressed, the counter increases in the following order, K 2  $\rightarrow$  K 3  $\rightarrow$  K 4.

If buttons already pressed once are pressed again, the counter will not increase. When the VOLUME knob is rotated in the + direction, the count increases in the following order.

V1  $\rightarrow$  V2  $\rightarrow$  V3.

When rotated in the - direction, it decreases in the following order.

V0  $\rightarrow$  V9  $\rightarrow$  V8.

When the AMS dial is rotated in the clockwise direction, the count increases in the following order.

J1  $\rightarrow$  J2  $\rightarrow$  J3.

When rotated in the counterclockwise direction, it decreases in the following order.

J0  $\rightarrow$  J9  $\rightarrow$  J8.

To exit from the test mode, press the **TUNER/BAND**, **DISPLAY/DEMO**, **FILE 2** buttons simultaneously again.

### [Switching the channel step 9 KHz/10 KHz]

Press **ENTER/NEXT** button and **POWER** button simultaneously to switch the AM channel step 9 KHz and 10 KHz. Be sure not to change with carelessness.

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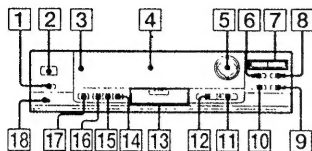
## SECTION 1 GENERAL

This section is extracted  
from instruction manual.

### Front Panel

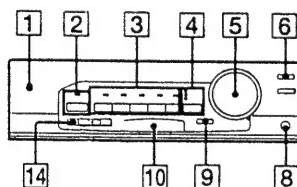
#### Tuner section

Refer to the pages indicated in parentheses  
for details on how to use the controls.



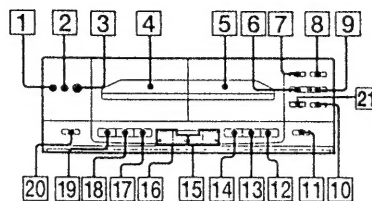
- 1 SLEEP button (24)
- 2 SYSTEM POWER switch (7)
- 3 Remote sensor
- 4 Display window (30)
- 5 CURSOR CONTROL buttons (6, 22)
- 6 TUNING MODE button (12)
- 7 TUNING +/- buttons (12)
- 8 TUNER MEMORY button (13)
- 9 STEREO/MONO button (12)
- 10 PTY button (13) (AEP, UK, G, IT, EE models)
- 11 ENTER/NEXT button/indicator (6, 9, 13, 22)
- 12 DISPLAY/DEMO button (7, 13, 22)
- 13 TUNER/BAND button/indicator (12, 19, 25)
- 14 REC button (25)
- 15 DAILY 2 button (24)
- 16 DAILY 1 button (24)
- 17 TIMER SET button (24, 25)
- 18 CLOCK SET button (6)

#### Amplifier section



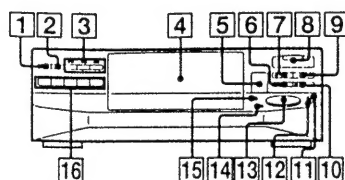
- 1 PHONES jack (20)
- 2 EFFECT button/indicator (20)
- 3 FILE 1 - 5 buttons/indicators (20, 21)
- 4 FILE SELECT button/indicators (20, 21)
- 5 VOLUME control (7, 20)
- 6 DBFB button (20)
- 8 SUPER WOOFER button
- 9 MEMORY button (22)
- 10 FUNCTION button (7, 14)
- 14 KARAOKE PON/MPX button (25)  
(E, AUS, PX, MX, AR model)

#### Tape player section



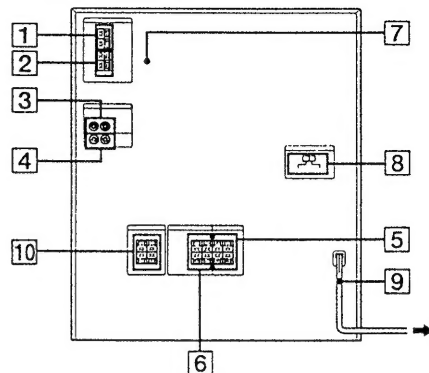
- 1 MIC jack (25) (E, AUS, PX, MX, AR models)
- 3 MIC LEVEL control (25)
- 4 Cassette compartment for DECK A (14)
- 5 Cassette compartment for DECK B (14)
- 6 [ ] (pause) button (14)
- 7 HIGH SPEED DUBBING button (19)
- 8 CD SYNCHRO button (15)
- 9 REC (recording) button (15)
- 10 DIRECTION button (15)
- 11 [ ] EJECT button for DECK B (14)
- 12 [ ] (fast rightward) button for DECK B (14)
- 13 [ ] (fast leftward) button for DECK B (14)
- 14 [ ] STOP button for DECK B (14)
- 15 [ ] (play) button for DECK B (14)
- 16 [ ] (play) button for DECK A (14)
- 17 [ ] (fast rightward) button for DECK A (14)
- 18 [ ] (fast leftward) button for DECK A (14)
- 19 [ ] STOP button for DECK A (14)
- 20 [ ] EJECT button for DECK A (14)
- 21 DOLBY NR button  
(AEP, UK, G, IT, EE models)

#### CD player section

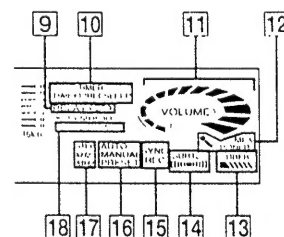
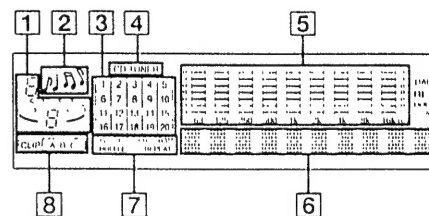


- 1 MUSIC CLIP PLAY button (11)
- 2 MUSIC CLIP ERASE button (11)
- 3 CLIP A, B, C buttons/indicators (10)
- 4 Front cover (7)
- 5 [ ] OPEN button (7)
- 6 DISC SKIP button (7)
- 7 [ ] (pause) button (7)
- 8 [ ] (play) button (7)
- 9 [ ] (stop) button (7)
- 10 AUTO button/indicator (7)
- 11 PROGRAM button (9)
- 12 REPEAT button (9)
- 13 JOC dial (7)
- 14 SHUFFLE buttons (8)
- 15 CONTINUE button (7)
- 16 DISC 1 - 5 buttons (7)

### Rear Panel

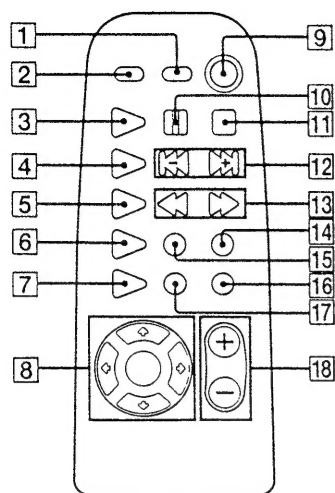


- 1 AM terminal (4)
- 2 FM 75Ω terminal (4)
- 3 PHONO IN jacks (26)
- 4 VIDEO (AUDIO) IN jacks (26)
- 5 FRONT SPEAKER connectors (5)
- 6 SURROUND SPEAKER connectors (5)
- 7 [ ] ground terminal (5)
- 8 VOLTAGE SELECTOR (except for Malaysian, Mexican and Australian models) (6)
- 9 AC power cord (6)
- 10 SUPER WOOFER connectors (5)



- 1 Disc calendar (7)
- 2 Demo mode indications (6)
- 3 Music calendar (7)
- 4 CD/TUNER indication (7)
- 5 Graphic Equalizer indication (21)
- 6 Multi-display (7, 12, 21)
- 7 CD play mode indications (8)
- 8 CLIP indicator (11)
- 9 Tape direction mode indication (14)
- 10 Timer indication (24)
- 11 VOLUME indication (7)
- 12 KARAOKE \ / PON/MPX R L indication (25)  
(E, AUS, PX, MX, AR models)
- 13 DBFB indication (20)
- 14 SUR indication (15, 21)
- 15 SYNC REC indicator (15)
- 16 Tuning mode indications (12)
- 17 STEP/frequency waves indication (12)
- 18 TUNED/STEREO/MONO indications (12)

## Remote



- 1 SLEEP button (23)
- 2 LOOP button (10)
- 3 CD ▷ (play) button (7)
- 4 TUNER/BAND ▷ button (12)
- 5 DECK A ▷ button (14)
- 6 DECK B ▷ button (14)
- 7 FUNCTION button (7, 14)
- 8 MUSIC MENU buttons (20)
- 9 POWER button (7)
- 10 ∞∞ (pause) (7)
- 11 □ (stop) (7)
- 12 ∞ / ∞ buttons (7)
- 13 ◀ / ▶ buttons (8)
- 14 EDIT button (16)
- 15 CHECK button (9)
- 16 DISC SKIP button (9)
- 17 CLEAR button (9)
- 18 VOL (volume) +/- buttons (7, 20)

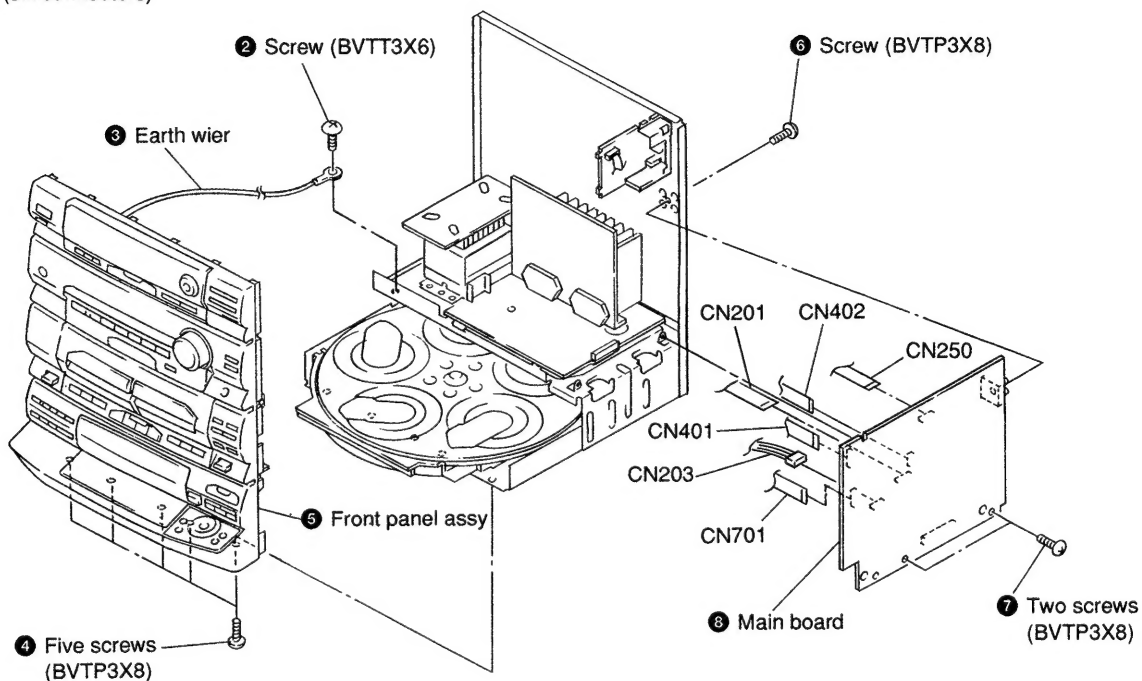
## SECTION 2

### DISASSEMBLY

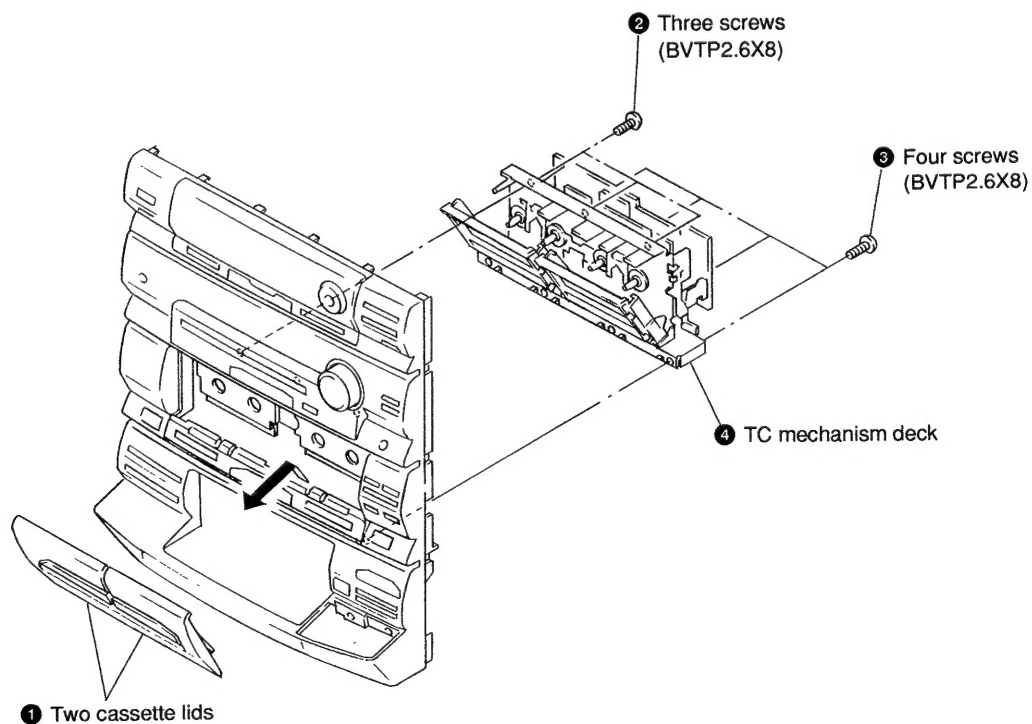
**Note :** Follow the disassembly procedure in the numerical order given.

#### 2-1. FRONT PANEL ASSY AND MAIN BOARD

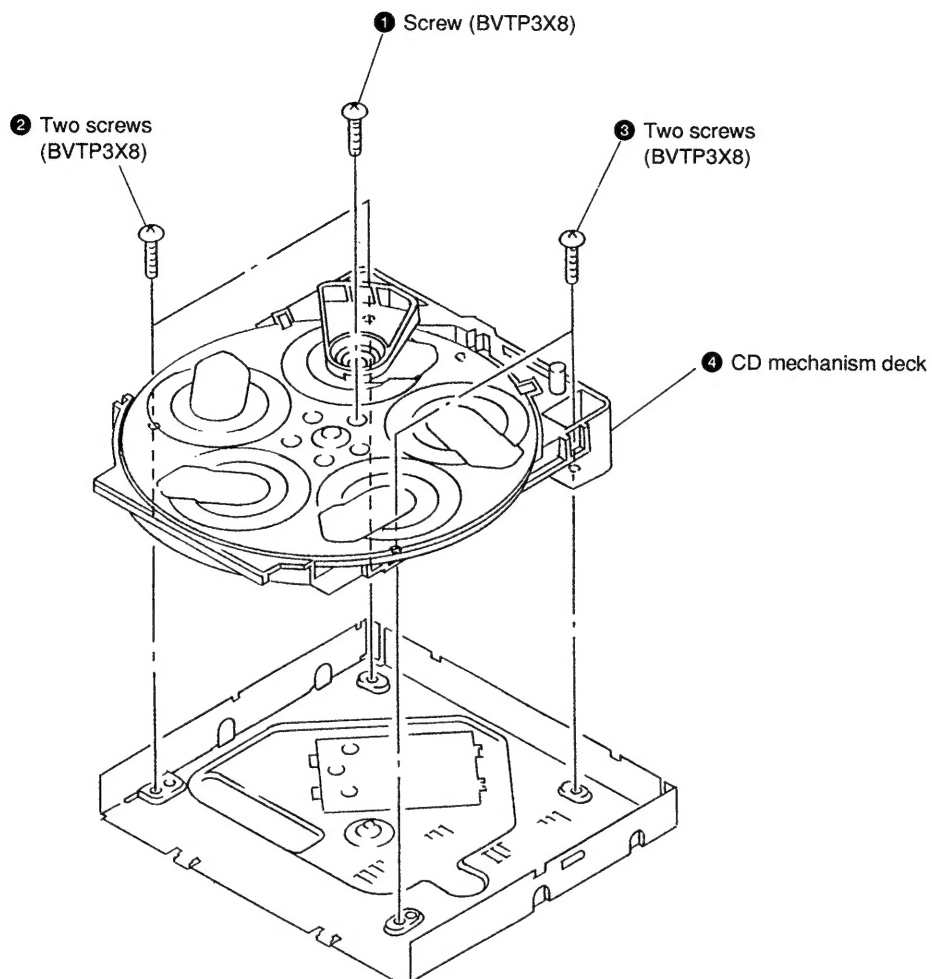
- ❶ Remove the connectors.
  - Main board (six connectors)



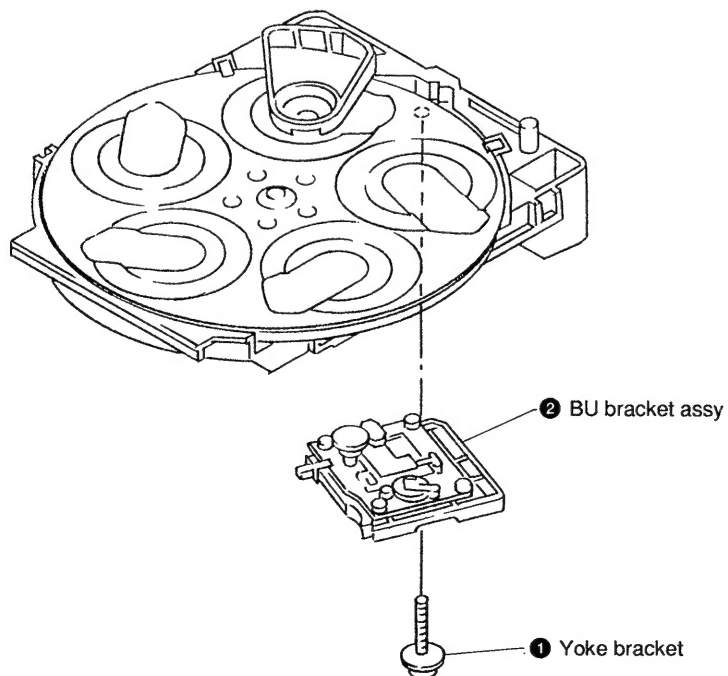
#### 2-2. TC MECHANISM DECK



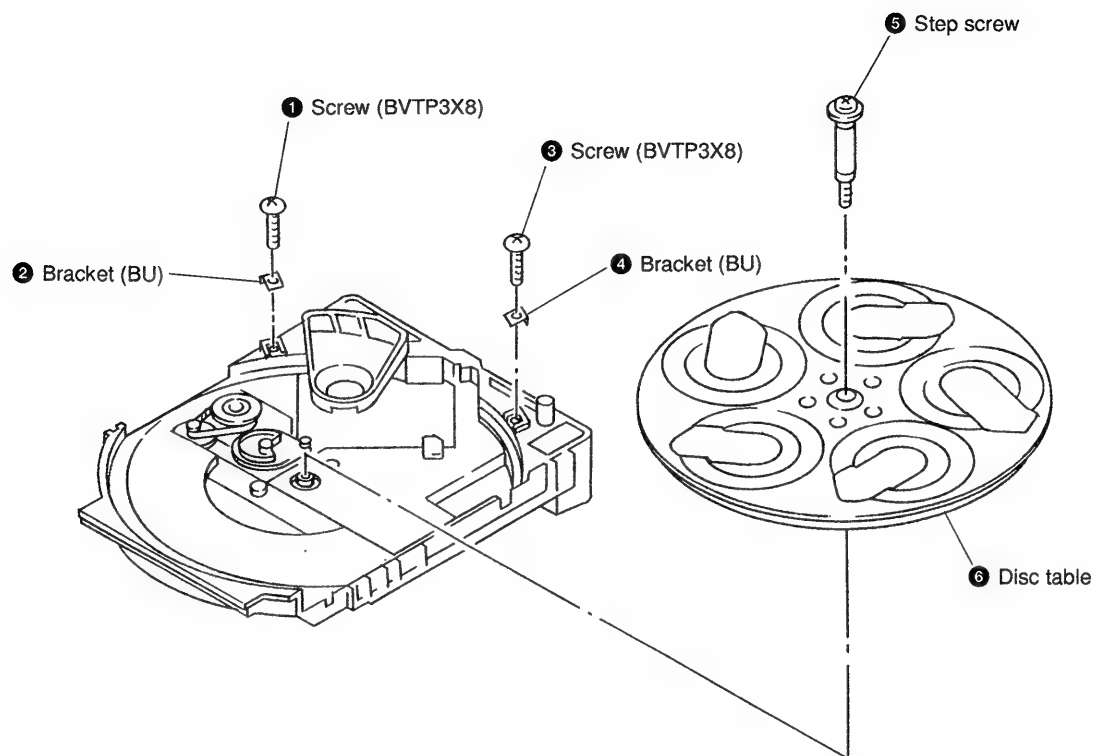
## 2-3. CD MECHANISM DECK



## 2-4. BU BRACKET ASSY



## 2-5. DISC TABLE



## SECTION 3 MECHANICAL ADJUSTMENTS

### PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab :
 

record/playback heads	pinch rollers
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

### Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	36 to 61g • cm (0.5 – 0.84 oz • inch)
FWD back tension	CQ-102C	2 to 6g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	36 to 61g • cm (0.5 – 0.84 oz • inch)
REV back tension	CQ-102RC	2 to 6g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	61 to 143g • cm (0.85 – 1.99 oz • inch)
FWD tension	CQ-403A	100g • cm or more (1.39 oz • inch or more)
REV tension	CQ-403R	100g • cm or more (1.39 oz • inch or more)

## SECTION 4 ELECTRICAL ADJUSTMENTS

### DECK SECTION

0 dB=0.775V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-ch.
7. Switches and controls should be set as follows unless otherwise specified.  
DOLBY NR switch : OFF(AEP, UK, G, IT, EE model)
8. Set to test mode. (Press key switch simultaneously DISPLAY/DEMO, TUNER/BAND and FILE 1 button.)

Tape	Signal	Used for
P-4-A100	10 kHz, -10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

### Record/Playback Head Azimuth Adjustment

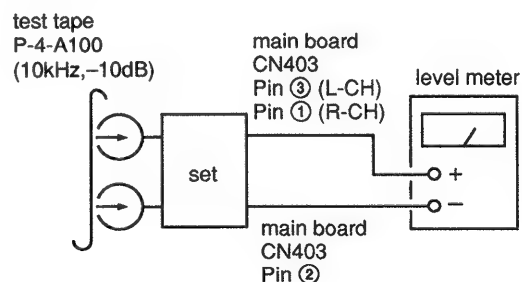
DECK A

DECK B

**Note :** Perform this adjustments for both decks.

#### Procedure :

1. Mode : Playback (FWD)



#### • Abbreviation

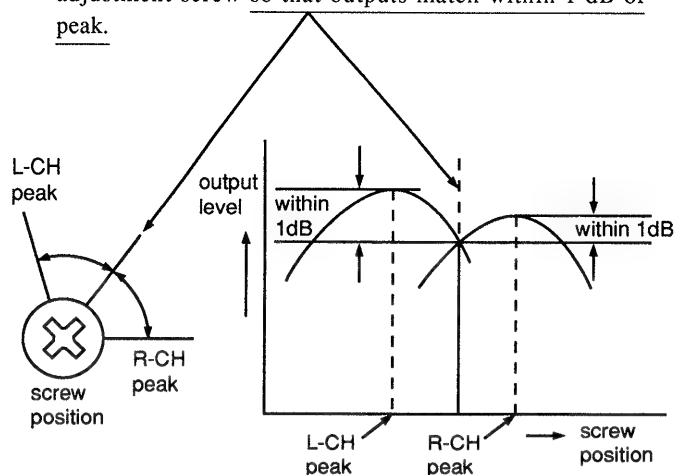
G : German model.

IT : Italian model.

EE : East European model.

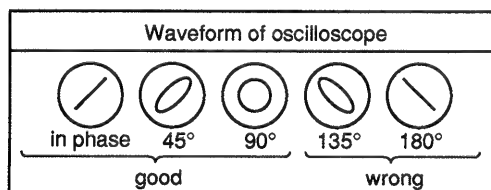
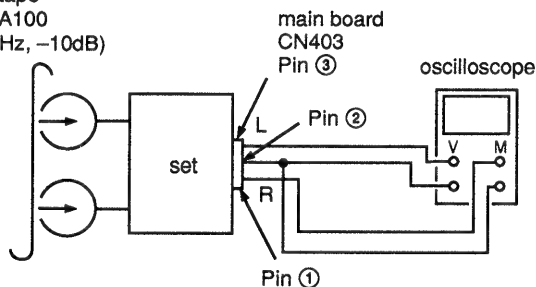


- Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.



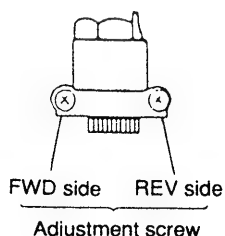
- Mode : Playback (FWD)

test tape  
P-4-A100  
(10kHz, -10dB)



- Repeat steps 1 to 3 in playback (REV) mode.
- After the adjustments, apply suitable locking compound to the parts adjusted.

**Adjustment Location :** Record/Playback Head (Deck A and B)

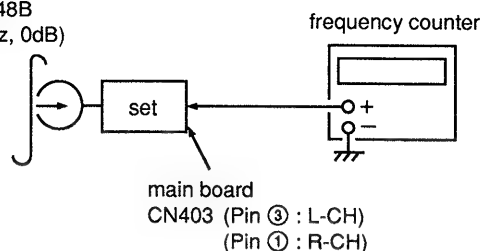


## Tape Speed Adjustment **DECK A**

### Procedure :

Mode : Playback (FWD)

test tape  
WS-48B  
(3kHz, 0dB)



### High speed adjustment

- Set to test mode. (See page 10)
- Insert the WS-48B into the deck A to playback.
- Press the **HIGH SPEED DUBBING** button. Then at HIGH speed mode.
- Adjust RV652 on the MD board so that the frequency counter reading becomes  $6,000 \pm 30$  Hz.
- Press the **HIGH SPEED DUBBING** button again to be set the NORMAL SPEED mode.

### Normal speed adjustment

- Set to the playback mode.
- Adjust RV651 on the MD board so that the frequency counter reading becomes  $3,000 \pm 15$  Hz.

Frequency difference between deck A and deck B the beginning of the tape should be within  $\pm 1.5\%$ .

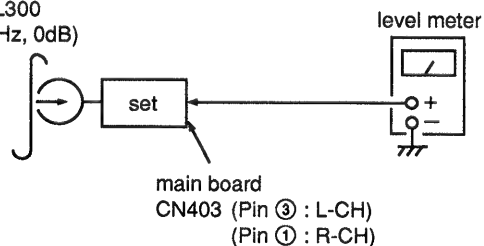
**Adjustment Location :** MD board

## Playback Level Adjustment **DECK A** **DECK B**

### Procedure :

Mode : Playback (FWD)

test tape  
P-4-L300  
(315Hz, 0dB)



Deck A is RV311 (L-CH) and RV411 (R-CH), deck B is RV301 (L-CH) and RV401 (R-CH) so that adjustment within the following adjustment level.

### Adjustment level :

CN403 PB level: 301.5 to 338.3 mV (-8.2 to -7.2 dB)

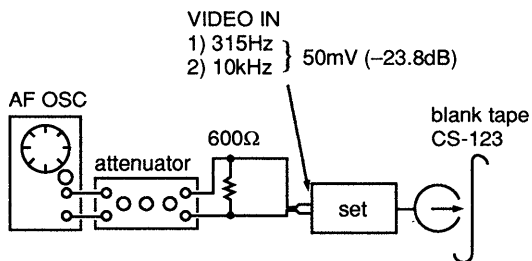
level difference between the channels: within  $\pm 0.5$  dB

**Adjustment Location :** MD board

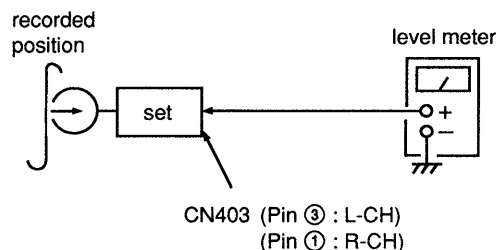
## Record Bias Current Adjustment **DECK B**

### Procedure :

1. Mode : record



2. Mode : Playback



Confirm playback the signal recorded in step 1 become adjustment level as follows.

If these levels do not adjustment level, adjust the RV341 (L-CH) and RV441 (R-CH) on the MD board to repeat step 1 and 2.

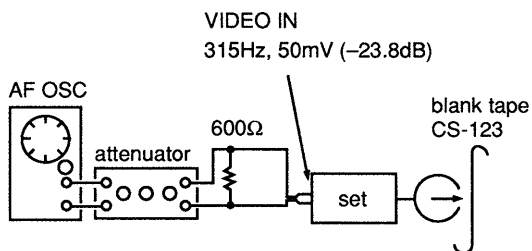
**Adjustment level :** The playback output of 10 kHz level difference against 315Hz reference should be  $\pm 0.5$  dB

**Adjustment Location :** MD board

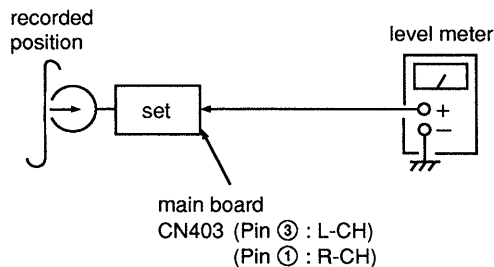
## Record Level Adjustment **DECK B**

### Procedure :

1. Mode: record



2. Mode: Playback



Confirm playback the signal recorded in step 1 become adjustment level as follows.

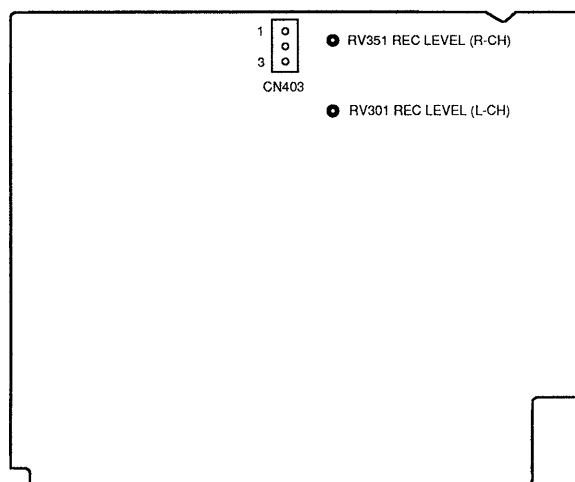
If these levels do not adjustment level, adjust the RV301 (L-CH) and RV351 (R-CH) on the main board to repeat steps 1 and 2.

### Adjustment level :

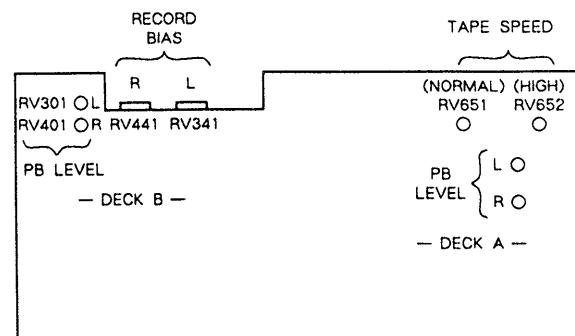
CN403 PB level : 47.2 to 53.0 mV ( $-24.3$  to  $-23.3$  dB)

**Adjustment Location :** main board

### [MAIN BOARD] (Component Side)



### [MD BOARD] (Conductor Side)



## TUNER SECTION

0dB=1μV

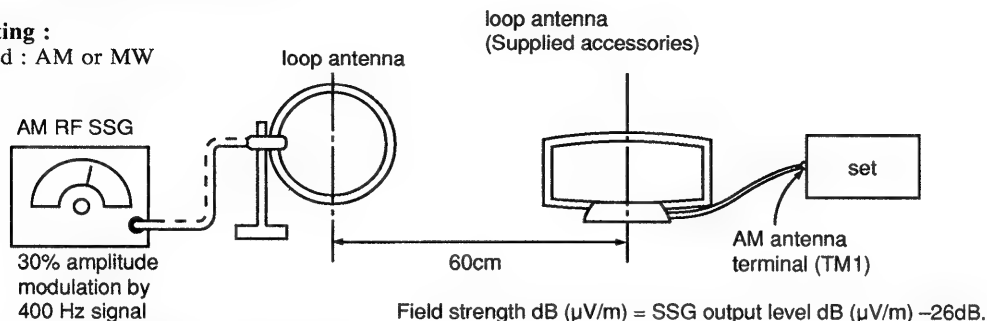
**Note:** As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

### AM Tuned Level Adjustment

**Note:** FM Tuned Level adjustment should be performed after this AM Tuned Level adjustment.

#### Setting :

Band : AM or MW



Carrier frequency : 999kHz (at 9kHz step)  
1000kHz (at 10kHz step)

#### Procedure :

1. Set the output of SSG so that the input level of the set becomes 55 dB.
2. Tune the set to 999 kHz or 1000 kHz.
3. Adjust RV41 (AEP, UK, IT, G, EE models), RV42 (other models) to the point (moment) when the TUNED indicator will change from going off to going on.

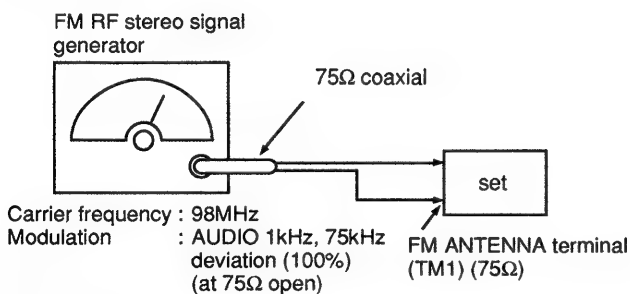
**Adjustment Location :** TCB board

### FM Tuned Level Adjustment

**Note :** This adjustment should be performed after the AM Tuned Level Adjustment.

#### Setting :

Band : FM



#### Procedure :

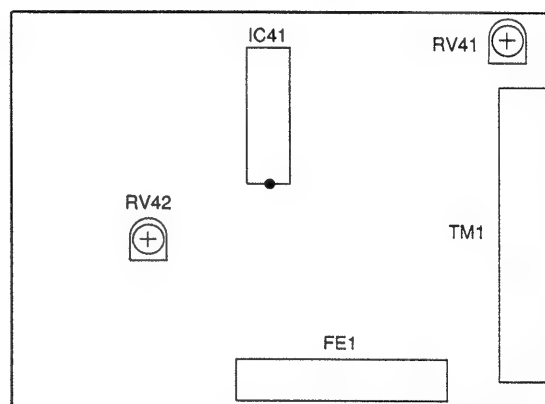
1. Supply a 25dBμ 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust RV42 (AEP, UK, IT, G, EE models), RV41 (other models) to the point (moment) when the TUNED indicator will change from going off to going on.

**Adjustment Location :** TCB board

#### Adjustment Location :

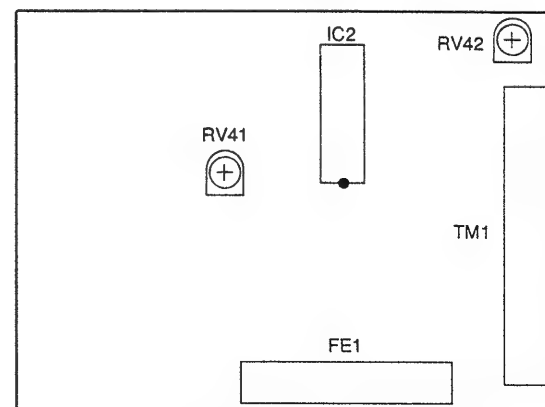
**AEP, UK, G, IT, EE model**

**[TCB BOARD]** (Component Side)



#### Other model

**[TCB BOARD]** (Component Side)



#### • Abbreviation

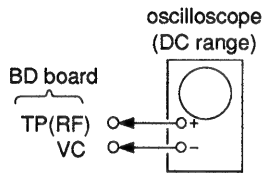
G : German model  
IT : Italian model  
EE : East European model

## CD SECTION

### Note :

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than  $10M\Omega$  impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

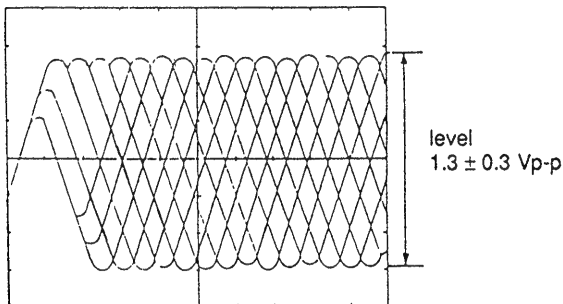
### Focus Bias Adjustment



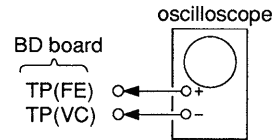
#### Procedure:

1. Connect oscilloscope to test point TP (RF). (GND terminal : VC)
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Adjust RV101 so that the waveform is clear.  
(Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

- RF signal  
VOLT/DIV : 200 mV  
TIME/DIV : 500 nS



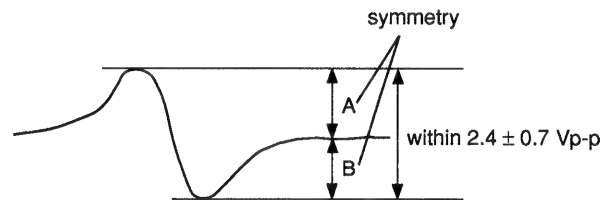
### S Curve Check



#### Procedure :

1. Connect oscilloscope to test point TP (FEO).
2. Connect between test point TP (FOK) and GND by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within  $2.4 \pm 0.7$  Vp-p.

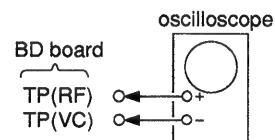
S-curve waveform



6. After check, remove the lead wire connected in step 2.

- Note :**
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
  - Take sweep time as long as possible and light up the brightness to obtain best waveform.

### RF Level Check



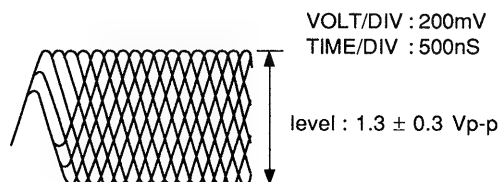
#### Procedure :

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

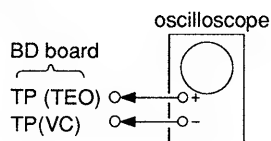
#### Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform

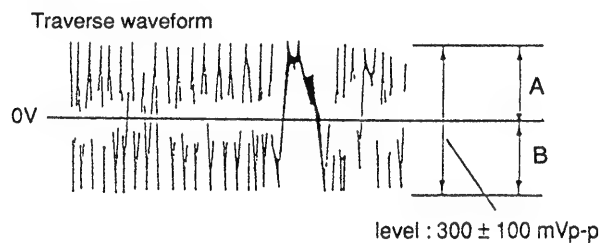


## E-F Balance Check



### Procedure :

1. Connect test point TP (ADJ) on Main board to GND with a lead wire.
2. Connect oscilloscope to test point TP (TEO).
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.



Specified level :  $\bullet \frac{A-B}{2(A+B)} \times 100 = \text{less than } \pm 7\%$   
 $\bullet A+B=300 \pm 100 \text{ mVp-p}$

6. Remove the lead wire connected in step 1.

### Focus/Tracking Gain Adjustment (RV102, RV103)

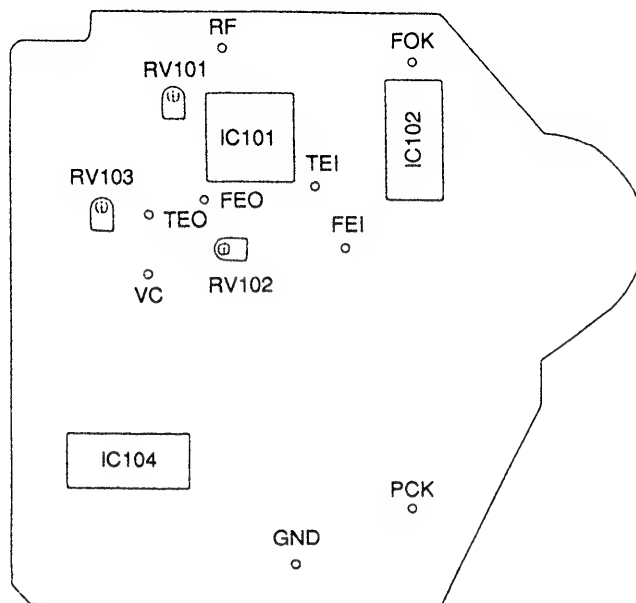
This gain has a margin, so even if it is slightly off.  
 There is no problem.

Therefore, do not perform this adjustment.

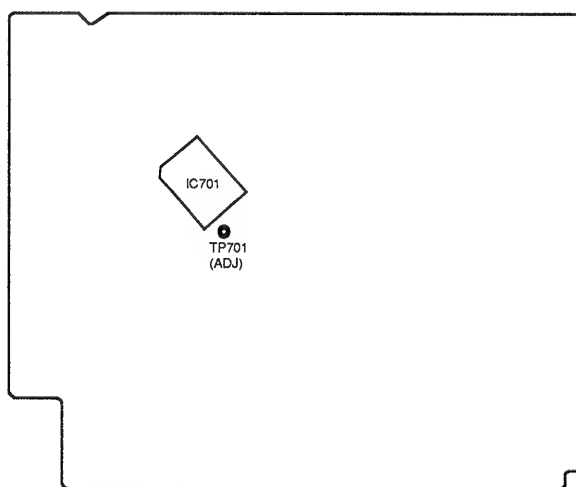
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

## Adjustment Location :

### [ BD BOARD ] (Conductor Side)



### [ MAIN BOARD ] (Conductor Side)

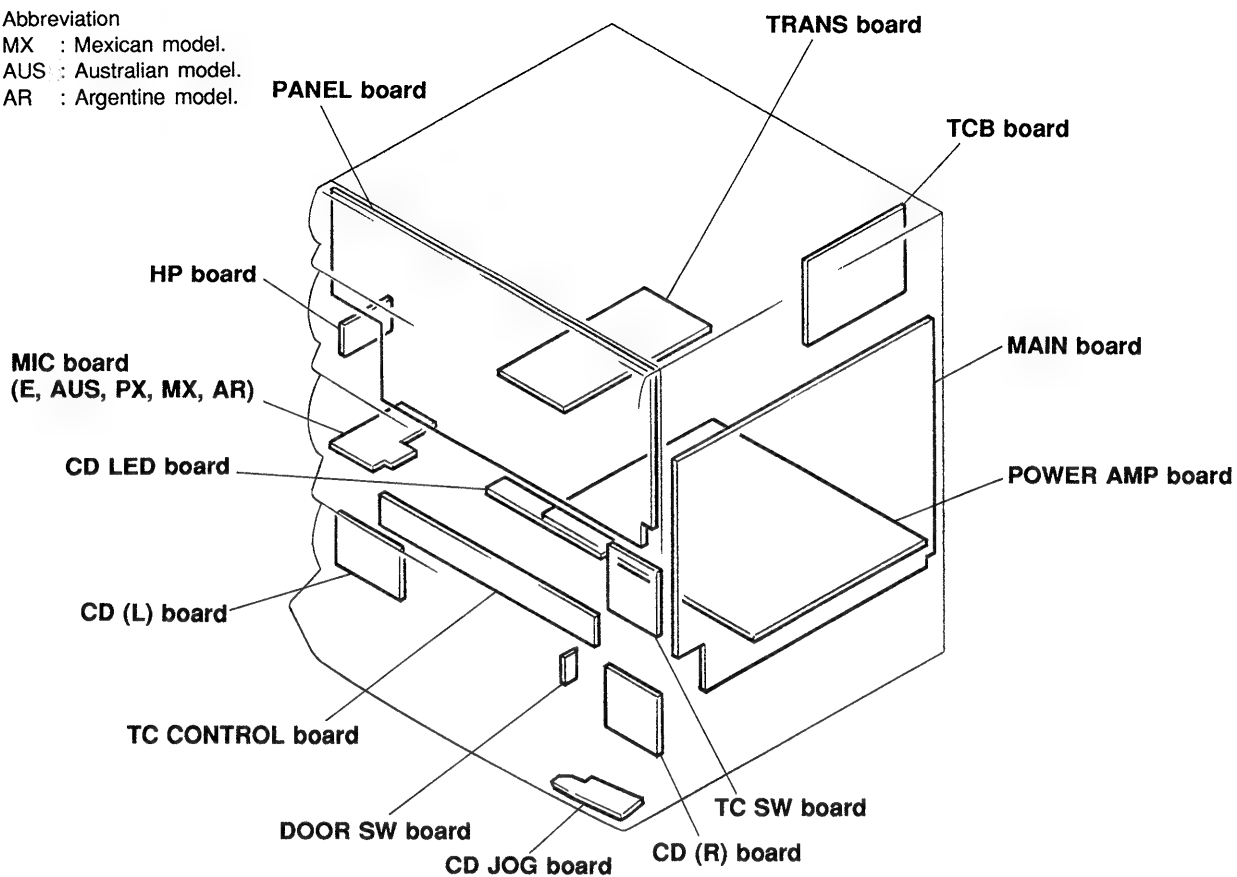


## SECTION 5 DIAGRAMS

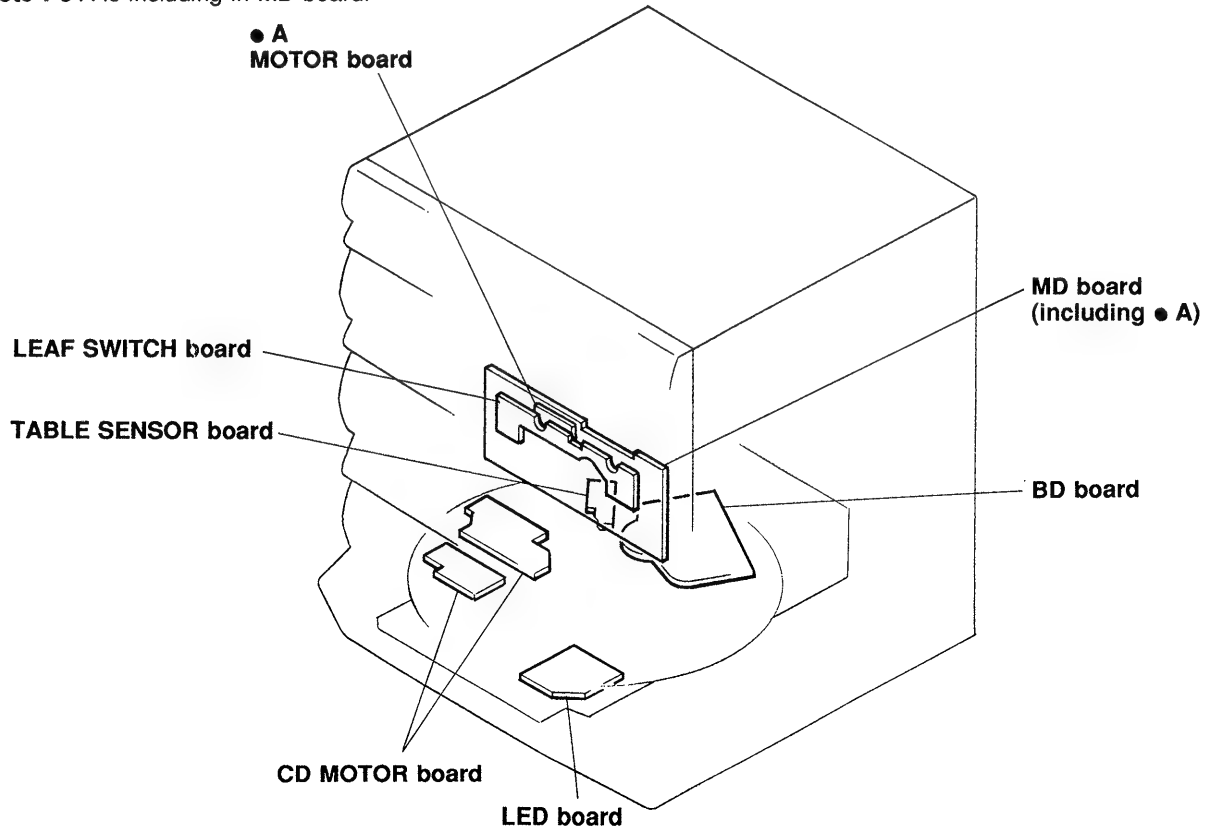
### 5-1. CIRCUIT BOARDS LOCATION

- Abbreviation

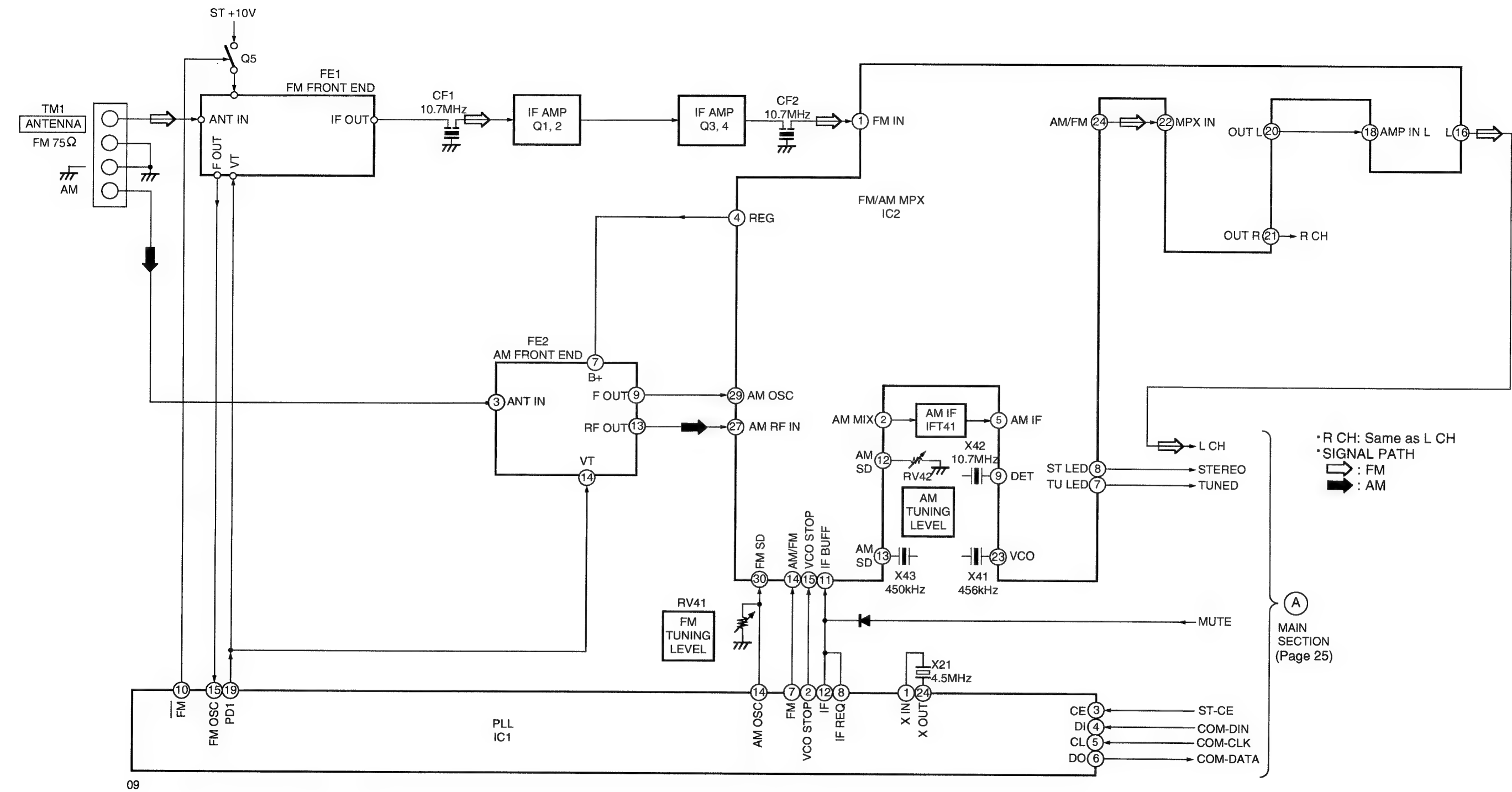
MX : Mexican model.  
AUS : Australian model.  
AR : Argentine model.



**Note :** ● A is including in MD board.

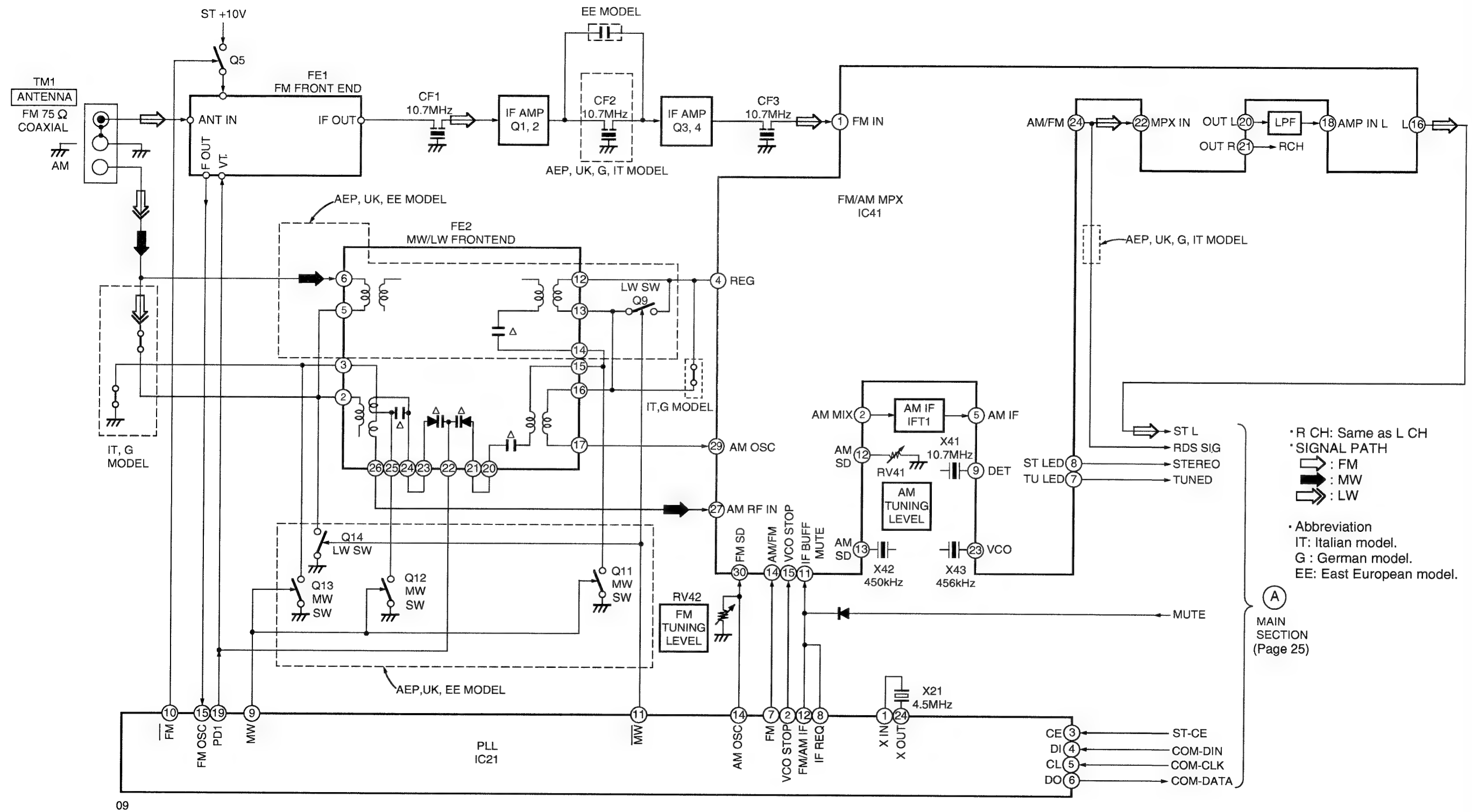


5-2. BLOCK DIAGRAMS  
— TUNER SECTION — (E, AUS, MX, PX, AR MODELS)



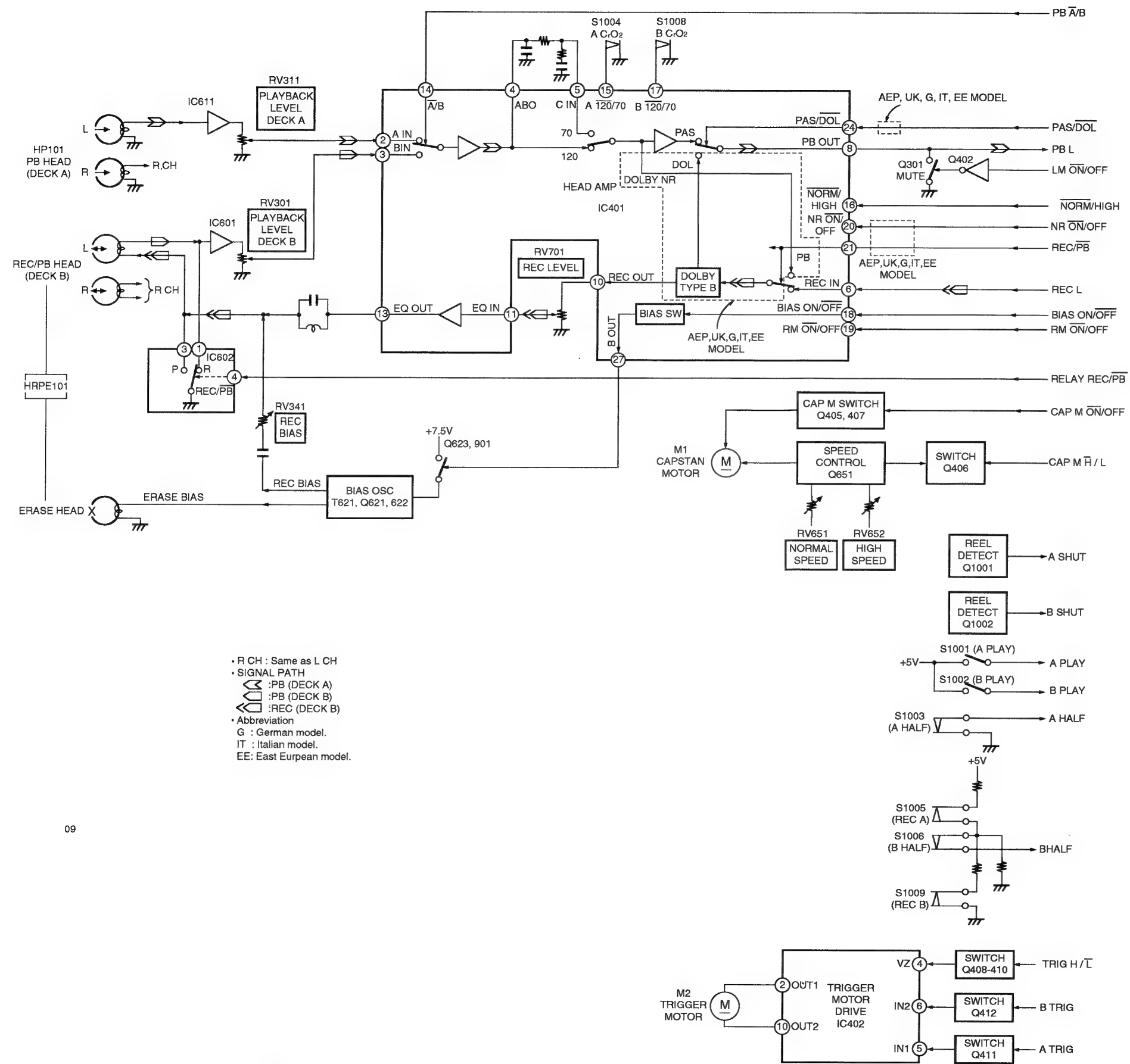
09

— TUNER SECTION — (E, AUS, MX, PX, AR MODELS)



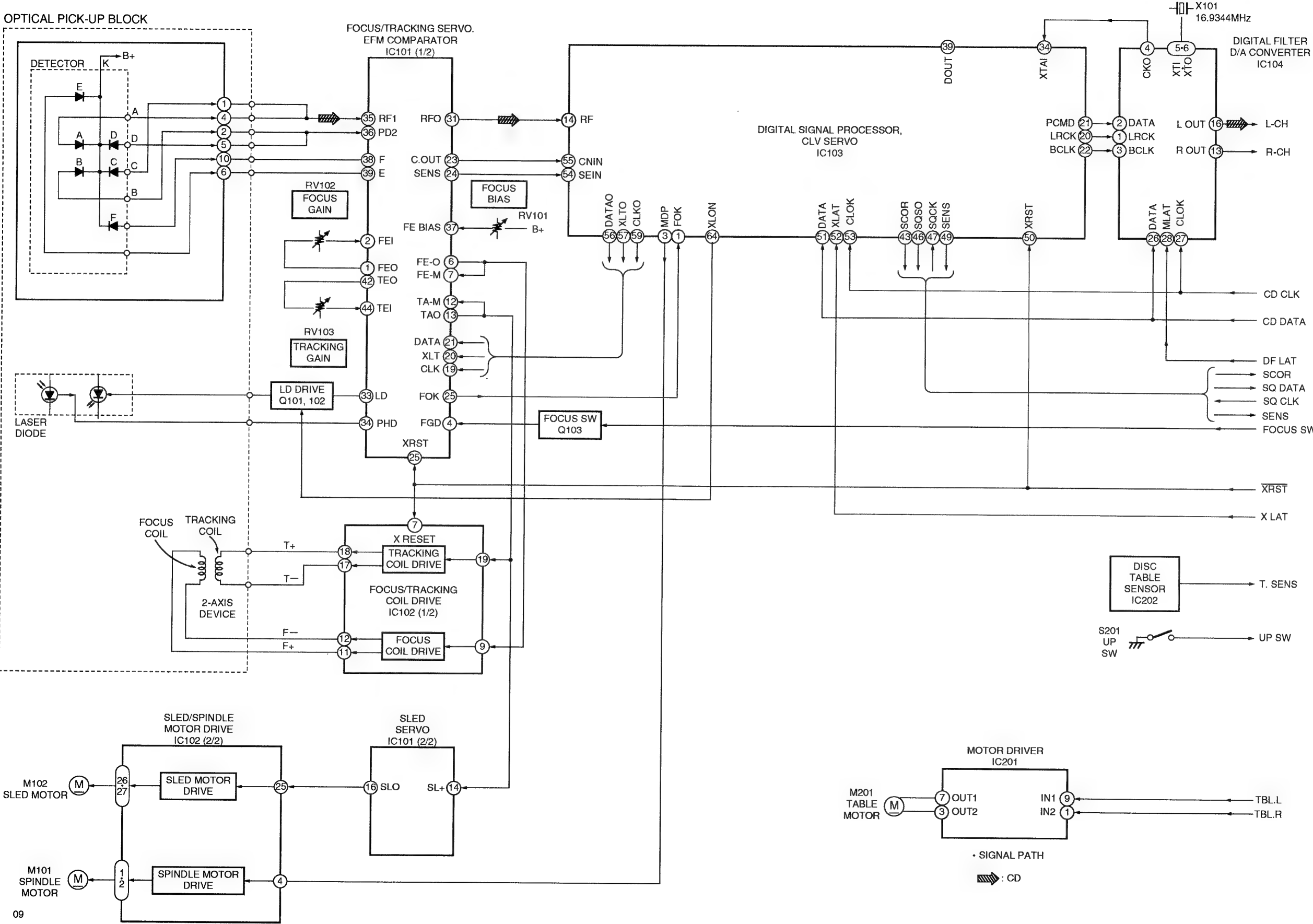


— DECK SECTION —

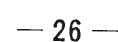


(B)  
MAIN  
SECTION  
(Page 25)

— CD SECTION —



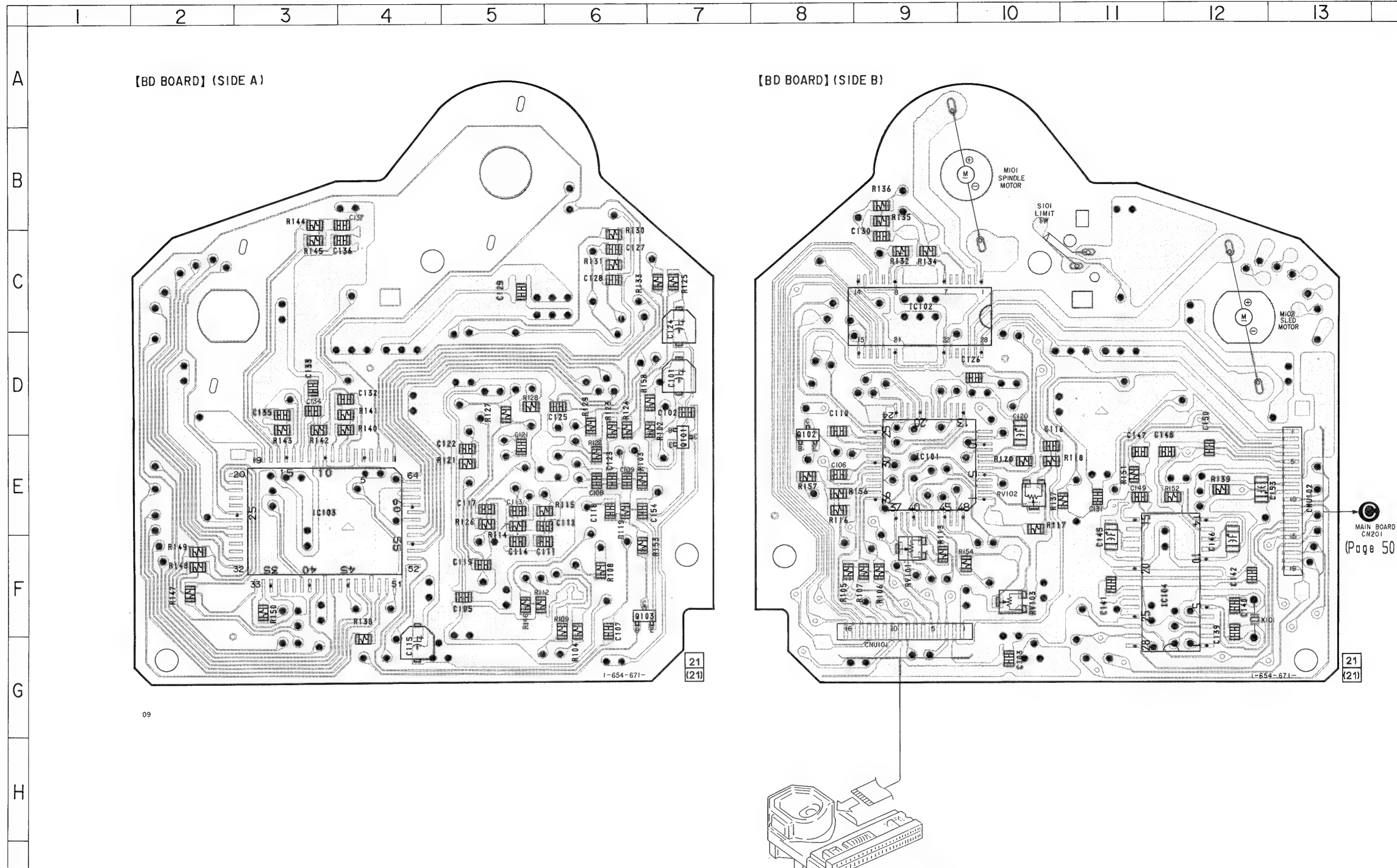
C  
MAIN  
SECTION  
(Page 25)



5-3. PRINTED WIRING BOARD — CD SECTION —  
• See page 16 for Circuit Boards Location.

• Semiconductor Location

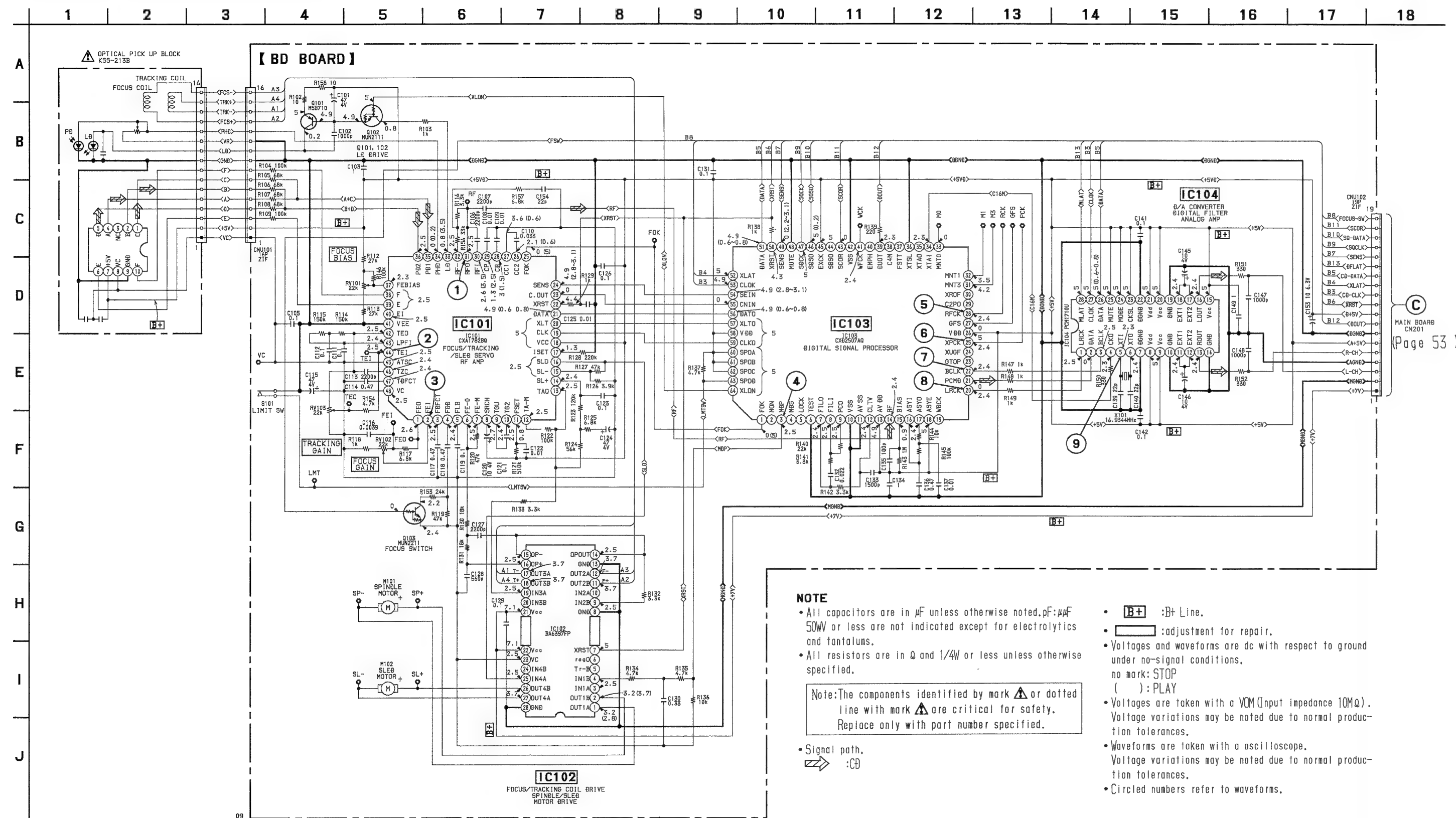
Ref. No.	Location
IC101	E-9
IC102	C-8
IC103	E-3
IC104	F-11
Q101	D-6
Q102	D-7
Q103	F-6



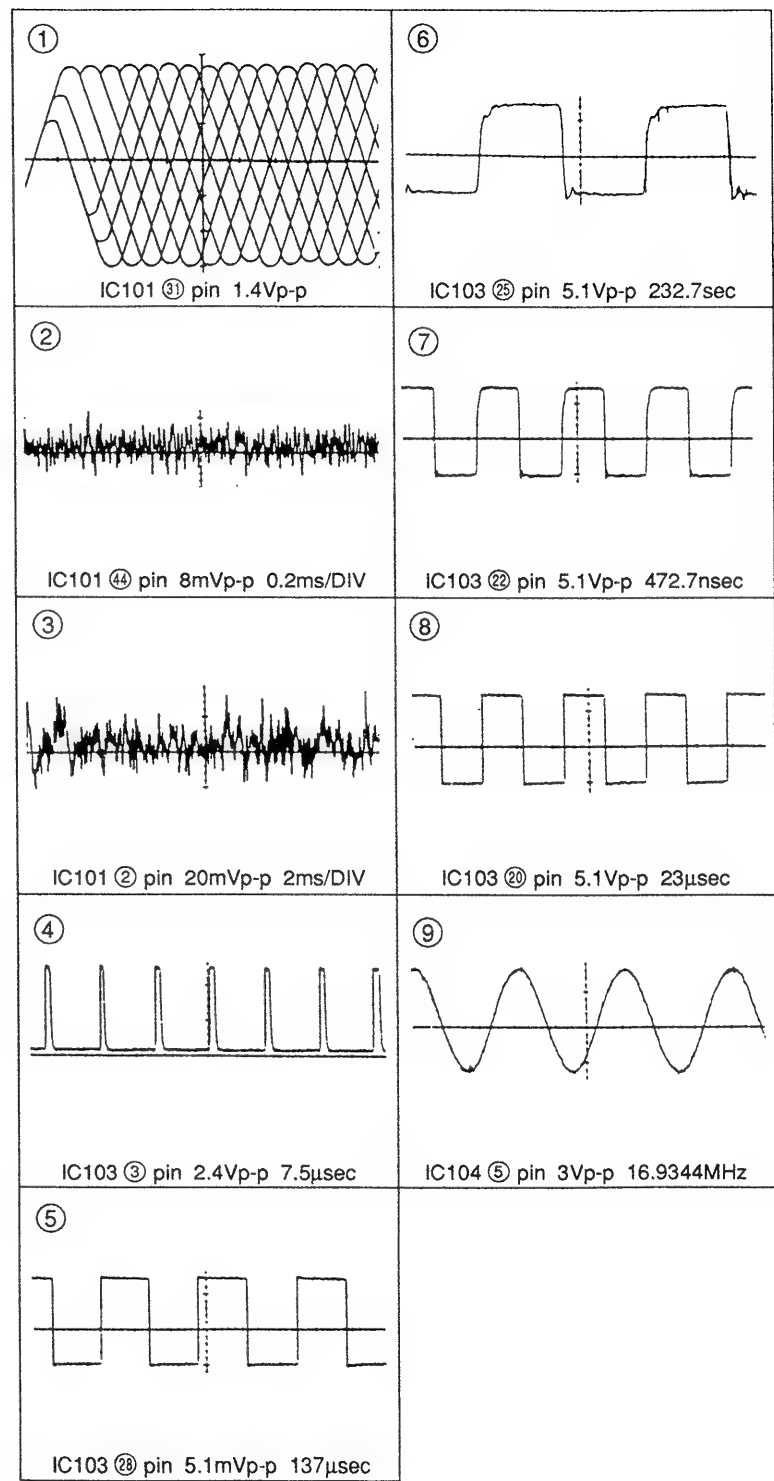
Note:

- : parts extracted from the component side.
- : Through hole.
- : Pattern from the side which enable seeing.  
(The other layer's patterns are not indicated.)

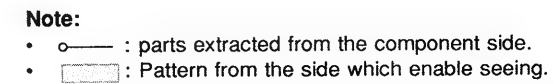
5-4. SCHEMATIC DIAGRAM — CD SECTION —  
• See page 81 for IC Block Diagrams. (IC101 — 104)



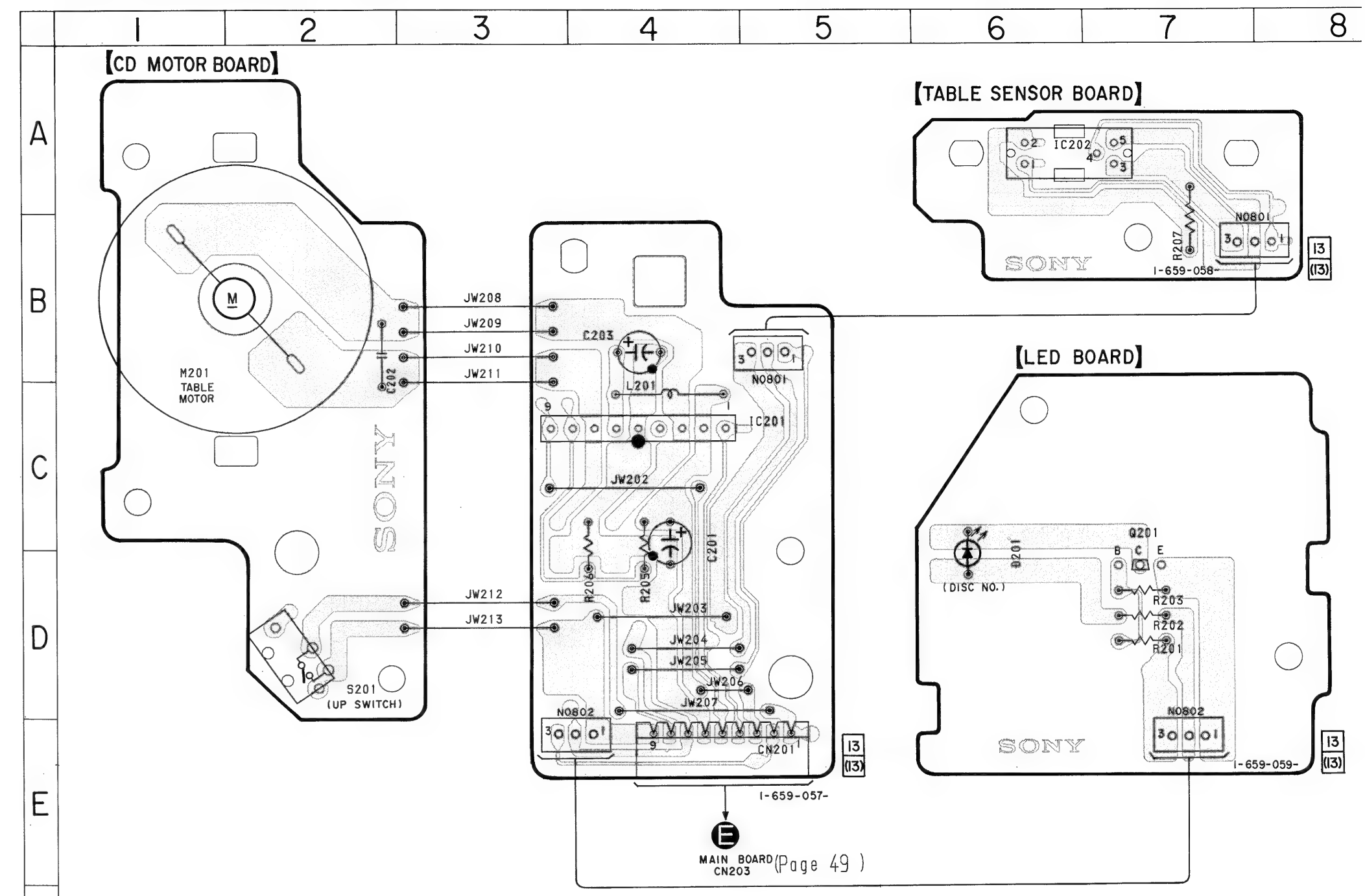
• Waveforms



— 33 —

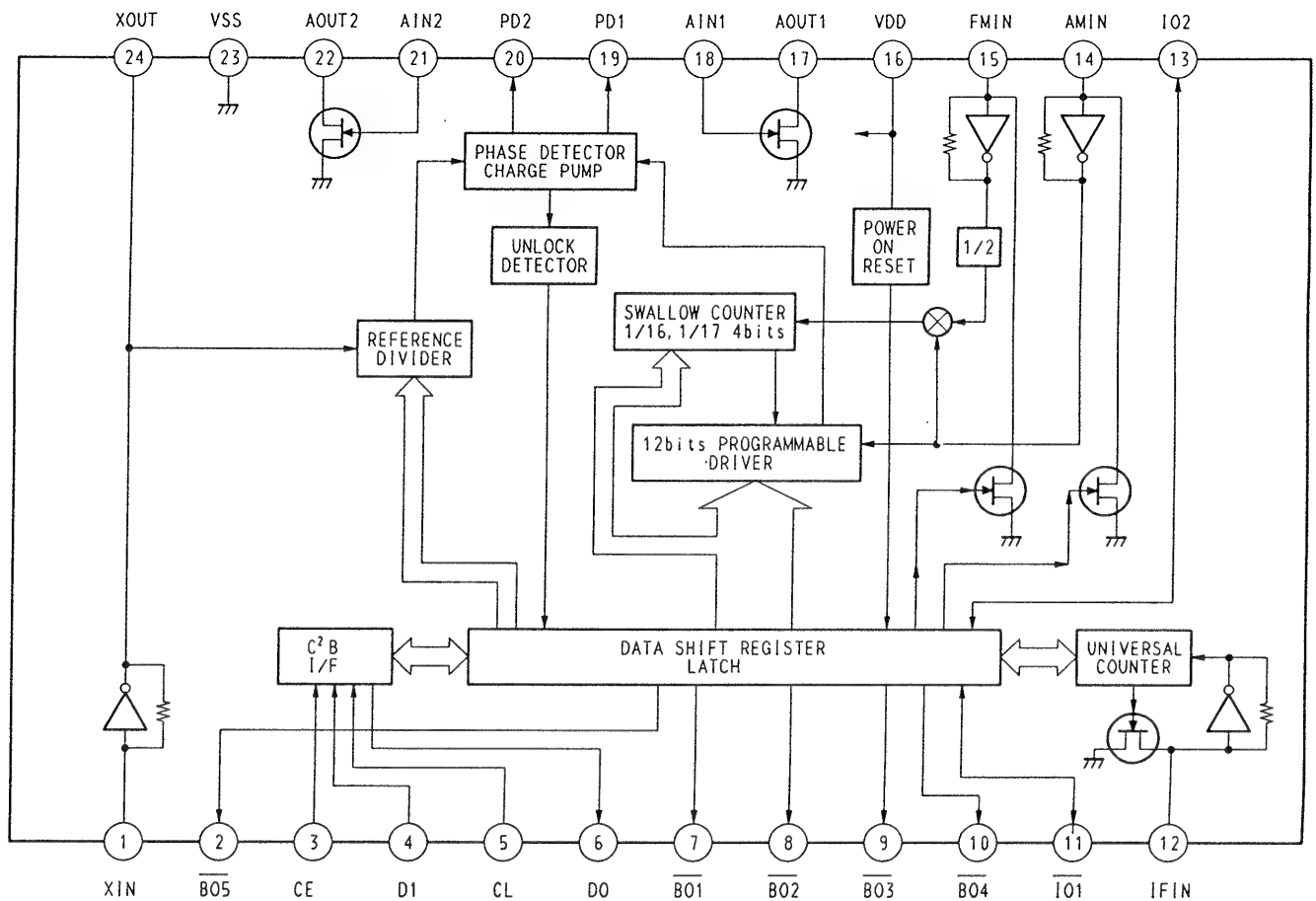


— 34 —

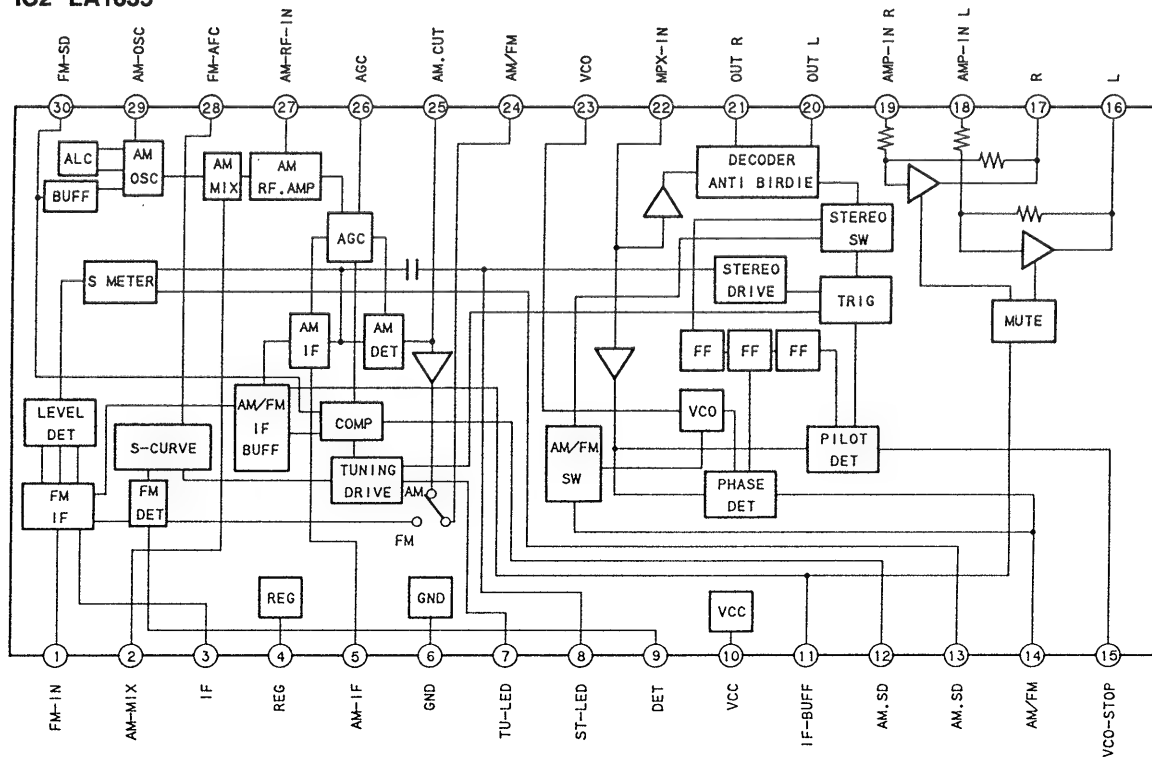


• IC Block Diagrams

IC1 LC72130

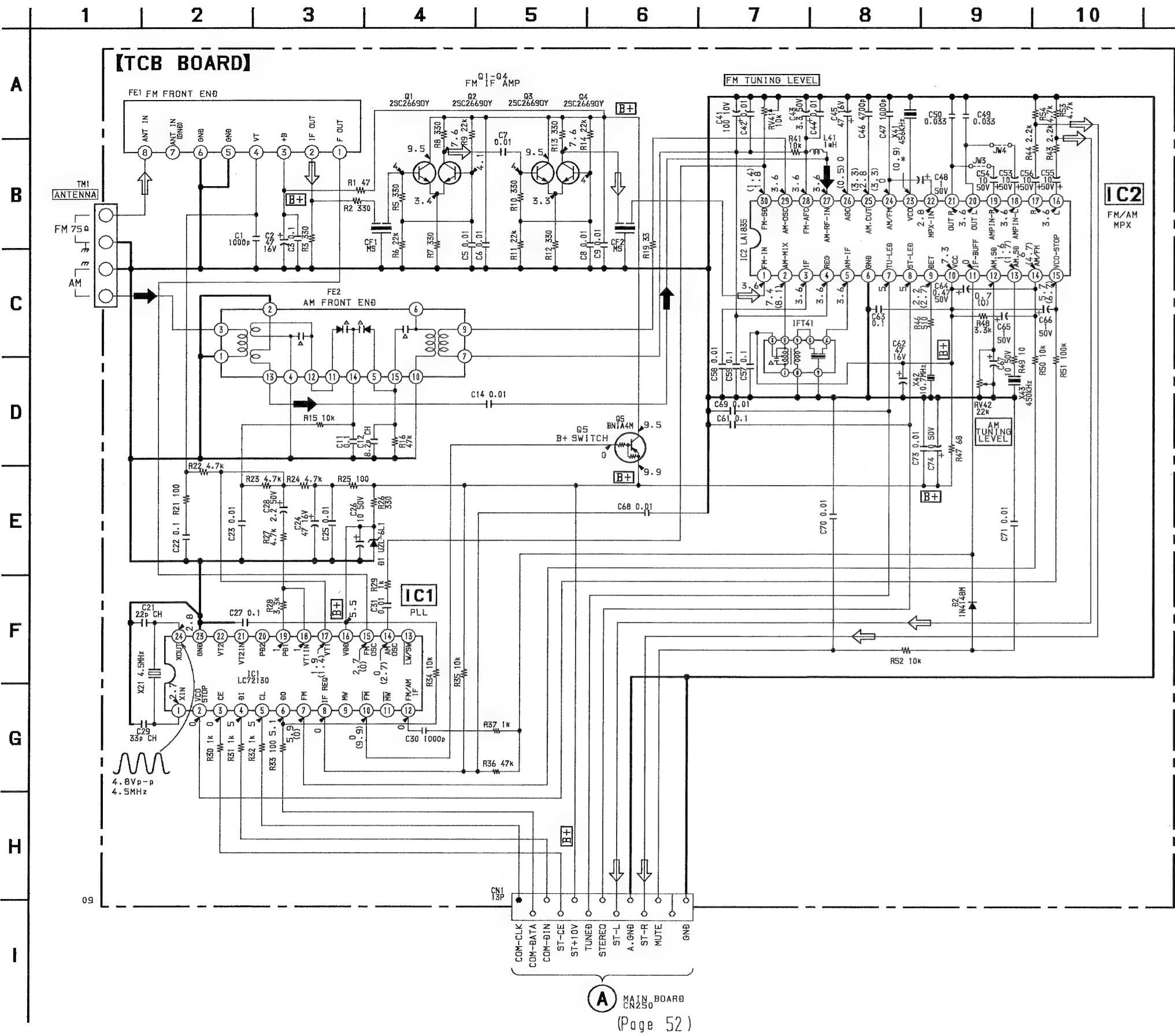


IC2 LA1835





5-7. SCHEMATIC DIAGRAM — TUNER SECTION — (E, AUS, MX, PX, AR MODELS)



NOTE

- All capacitors are in  $\mu\text{F}$  unless otherwise noted,  $\text{pF}$ :  $\mu\text{pF}$  50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- $\triangle$  : internal component.
- $\square$  : panel designation.

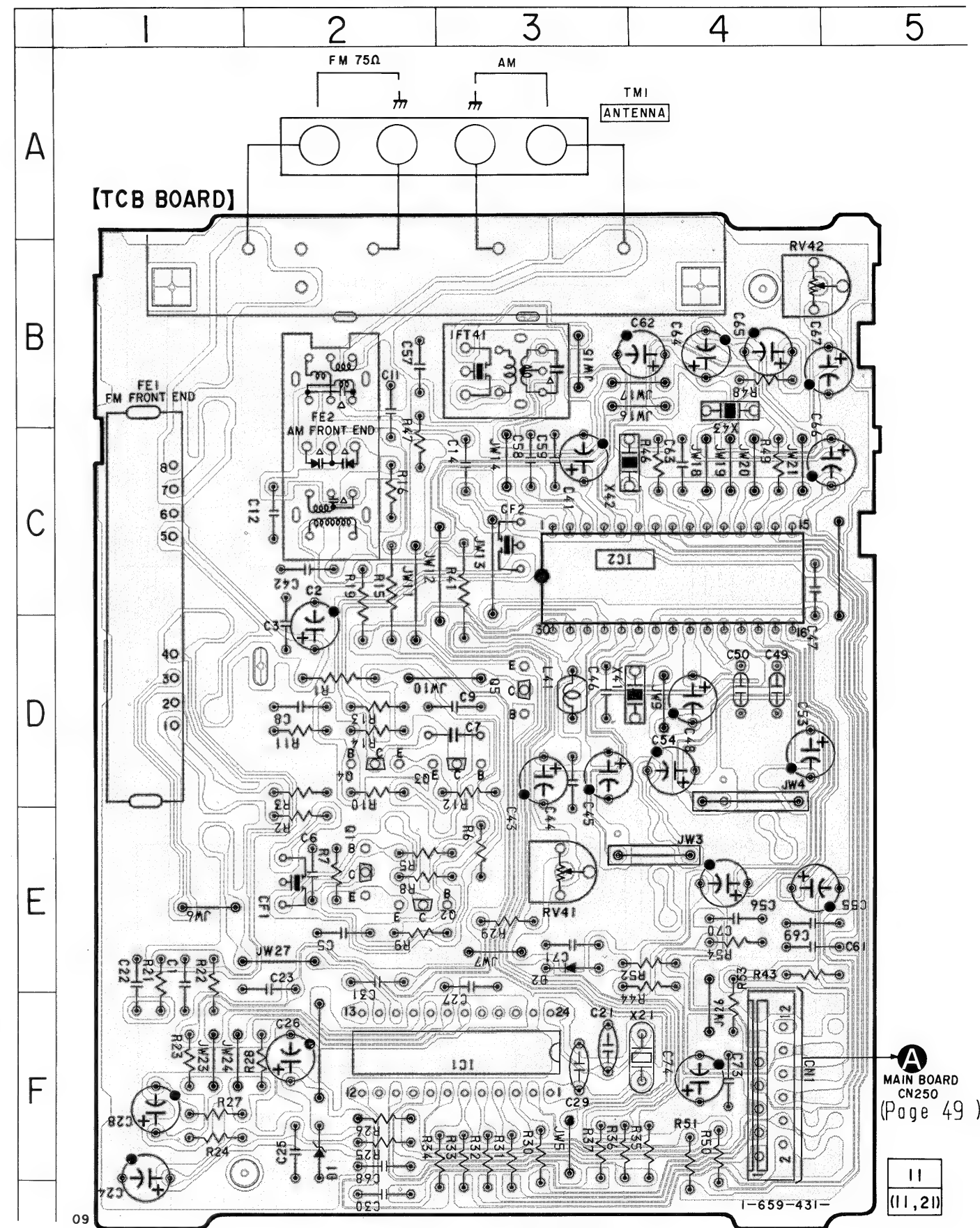
Note: The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

- $\text{B+}$  : B+ Line.
- $\square$  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
no mark: FM  
( ): AM  
\* : can not be measured.
- Voltages are taken with a VOM (Input impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Abbreviation  
AUS: Australian model.  
MX: Mexican model.  
AR: Argentine model.
- Signal path.  
 $\rightarrow$  : FM  
 $\rightarrow$  : AM

• Semiconductor Location

Ref. No.	Location
D1	F-2
D2	E-3
IC1	F-3
IC2	C-3
Q1	E-2
Q2	E-3
Q3	D-2
Q4	D-2
Q5	D-3

5-8. PRINTED WIRING BOARD — TUNER SECTION — (E, AUS, MX, PX, AR MODELS)  
• See page 16 for Circuit Boards Location.



Note:

- $\circ$  : parts extracted from the component side.
- $\triangle$  : internal component.
- $\square$  : Pattern from the side which enable seeing.

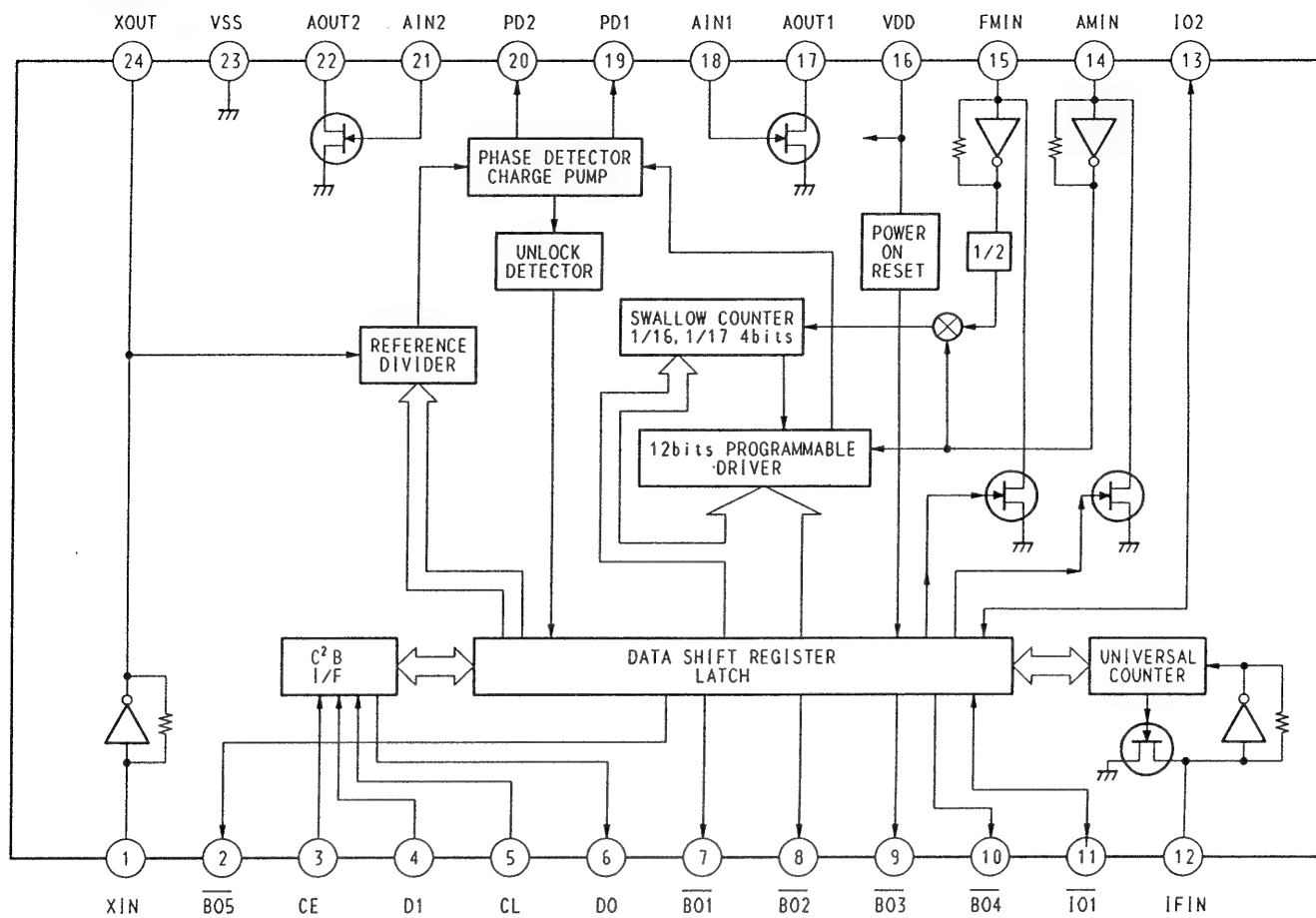
• Abbreviation

- MX : Mexican model.
- AUS : Australian model.
- AR : Argentine model.

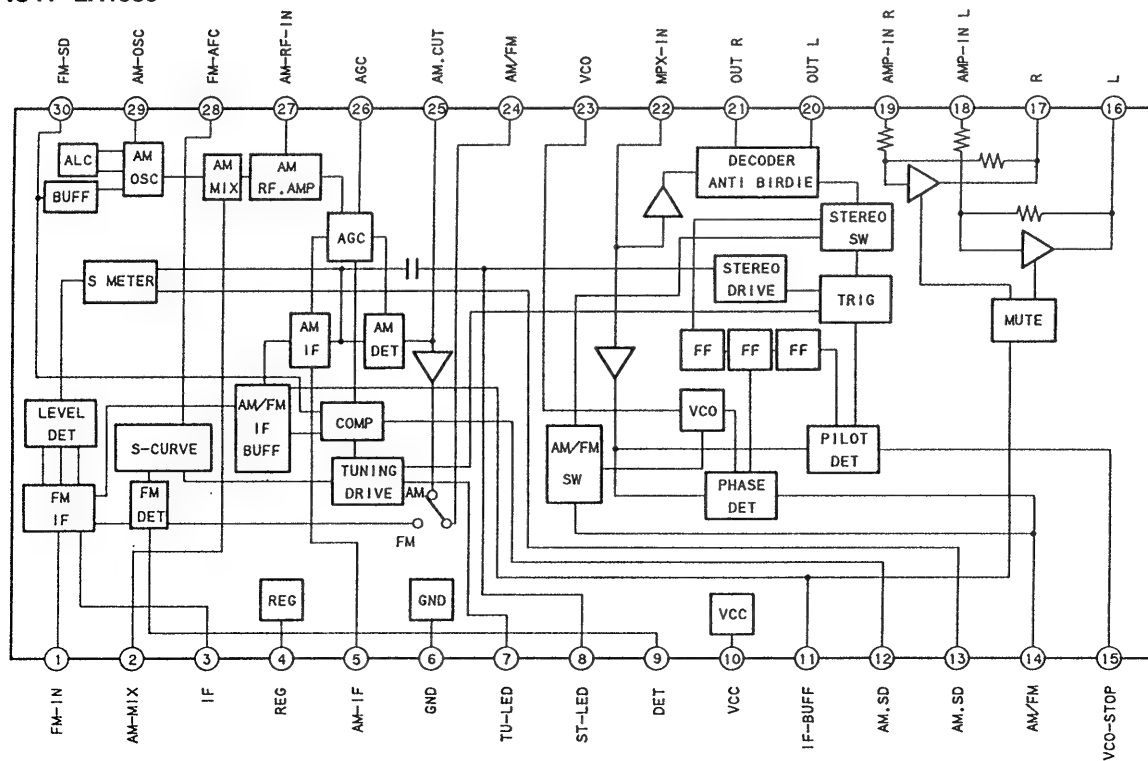


## • IC Block Diagrams

IC21 LC72130



IC41 LA1835



**TCB BOARD**

AEP, UK, IT, G MODEL

FM FRONT END

FM IF AMP

EE MODEL

IT, G MODEL

MW/LW FRONT END

IT, G MODEL

IC21

IC41

MAIN BOARD CN250

(Page 52)

**NOTE**



- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} = \mu\mu\text{F}$  50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- $\Delta$  : internal component.
- $\square$  : panel designation.




Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

- $\text{B+}$  : B+ Line.
- $\square$  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions, no mark: FM ( ) : MW < > : LW
- Voltages are taken with a VOM (input impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Abbreviation G : German model. IT : Italian model. EE : East European model.
- Signal path.  $\Rightarrow$  : FM  $\Rightarrow$  : AM

**Semiconductor Location**

Ref. No.	Location
D21	G-1
D41	G-3
IC21	G-2
IC41	D-4
Q1	E-2
Q2	E-2
Q3	E-3
Q4	E-2
Q5	D-2
Q9	C-2
Q11	B-4
Q12	B-4

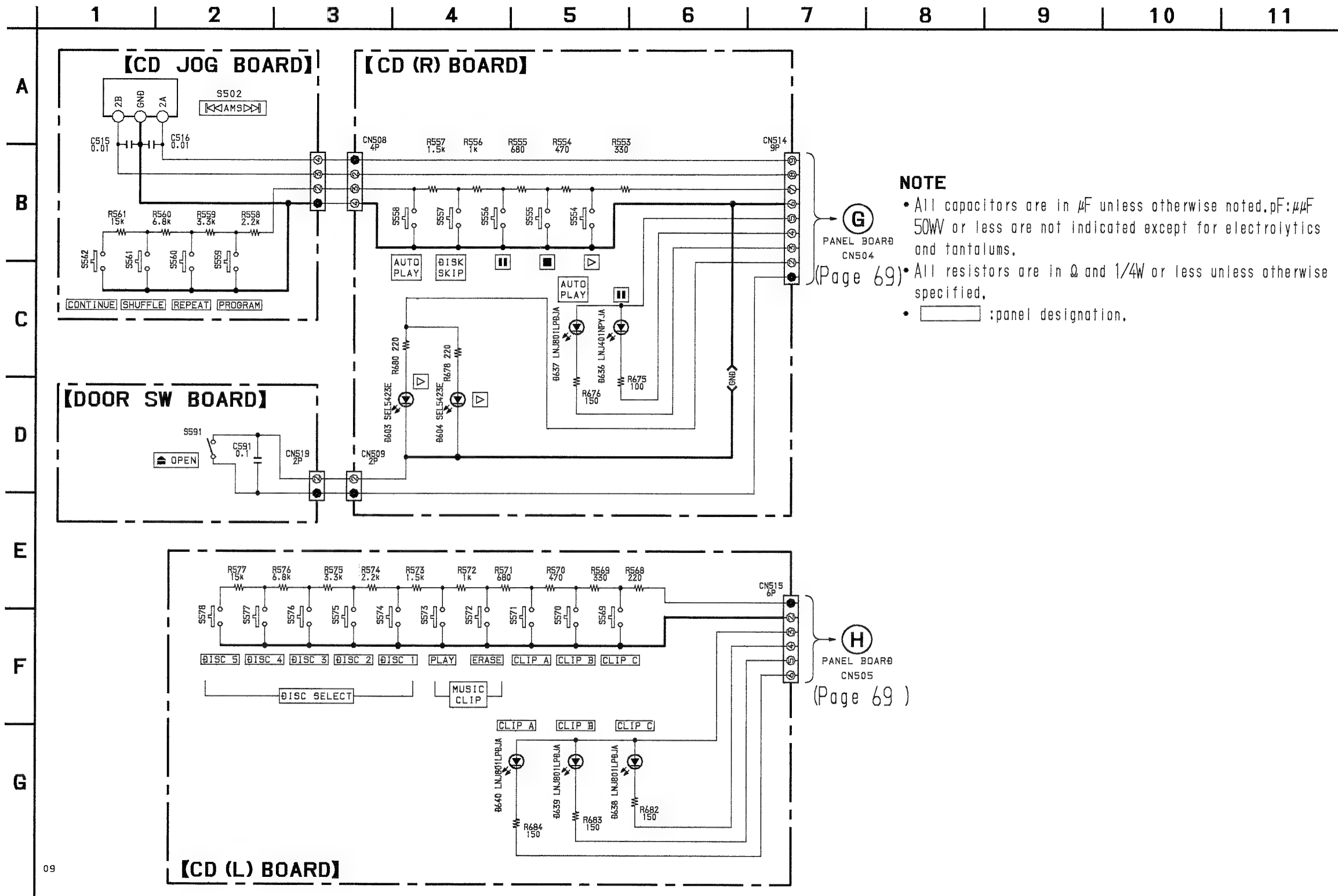
Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

- **B+** :B+ Line.
  -  :adjustment for repair.
  - Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
no mark:FM  
( ) :MW  
< > :LW
  - Voltages are taken with a VOM (Input impedance 10M $\Omega$ ).  
Voltage variations may be noted due to normal production tolerances.
  - Waveforms are taken with an oscilloscope.  
Voltage variations may be noted due to normal production tolerances.
  - Abbreviation  
G :German model.  
IT :Italian model.  
EE :East European model.
  - Signal path.  
 :FM  
 :AM
- **Semicon**

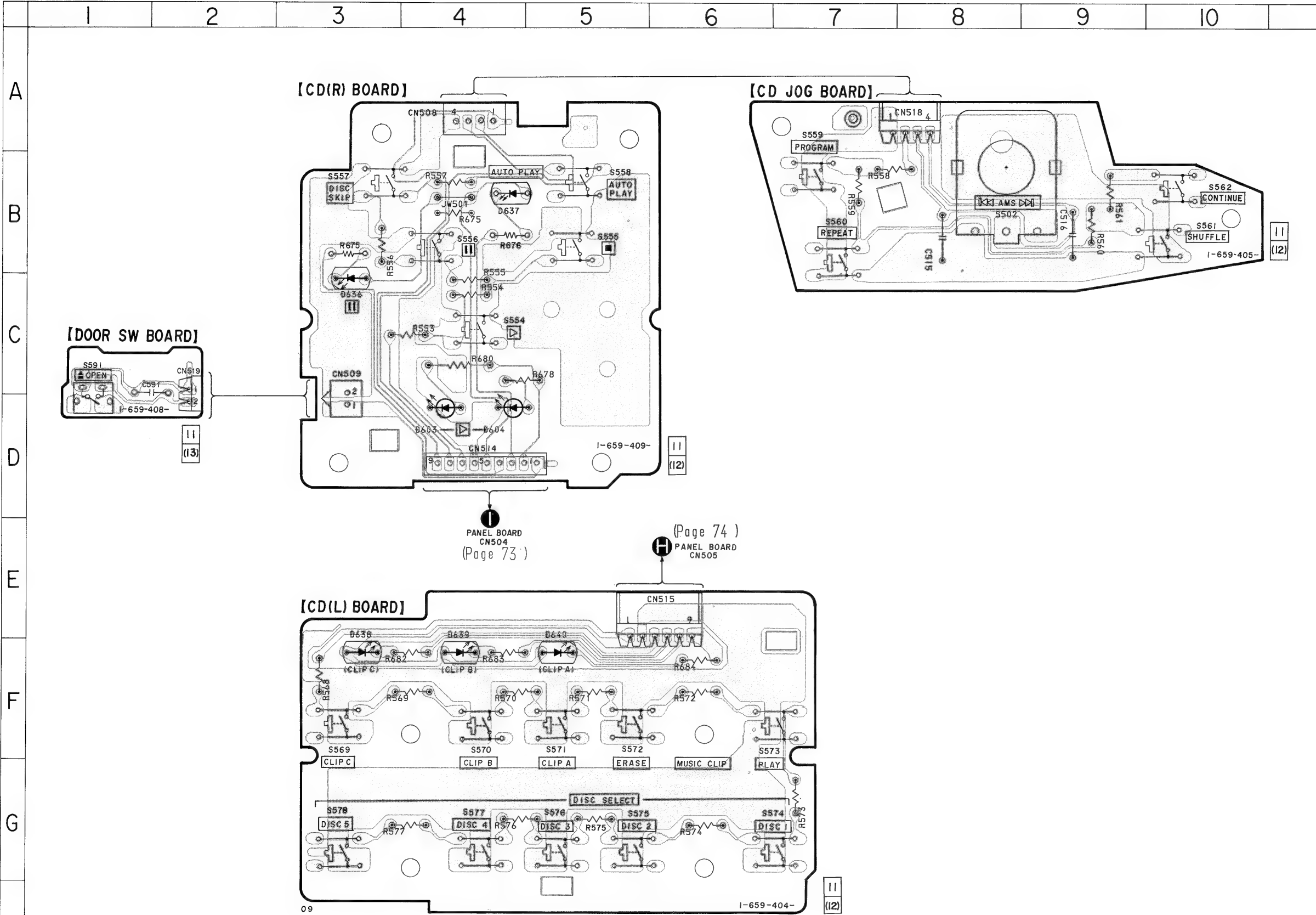
Ref. No.	Location
D21	G-1
D41	G-3
IC21	G-2
IC41	D-4
Q1	E-2
Q2	E-2
Q3	E-3
Q4	E-2
Q5	D-2
Q9	C-2
Q11	B-4
Q12	B-4
Q13	B-3
Q14	B-3

Abbreviation  
G : German model.  
IT : Italian model.  
EE : East European model.

5-11. SCHEMATIC DIAGRAM — CD PANEL SECTION —

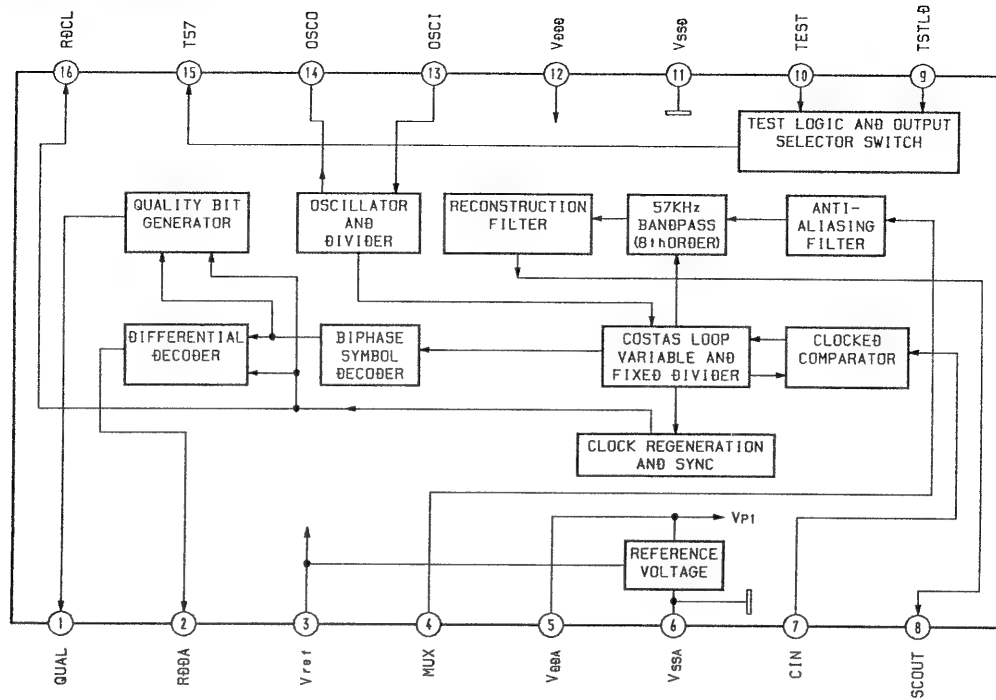
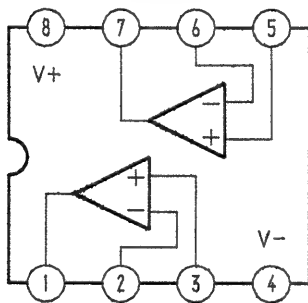
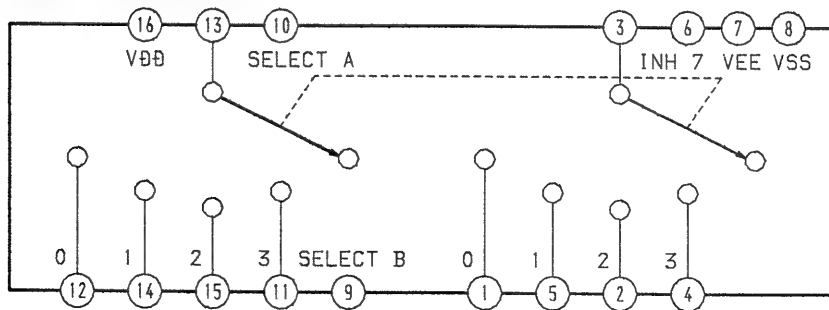


5-12. PRINTED WIRING BOARD — CD PANEL SECTION —  
• See page 16 for Circuit Boards Location.



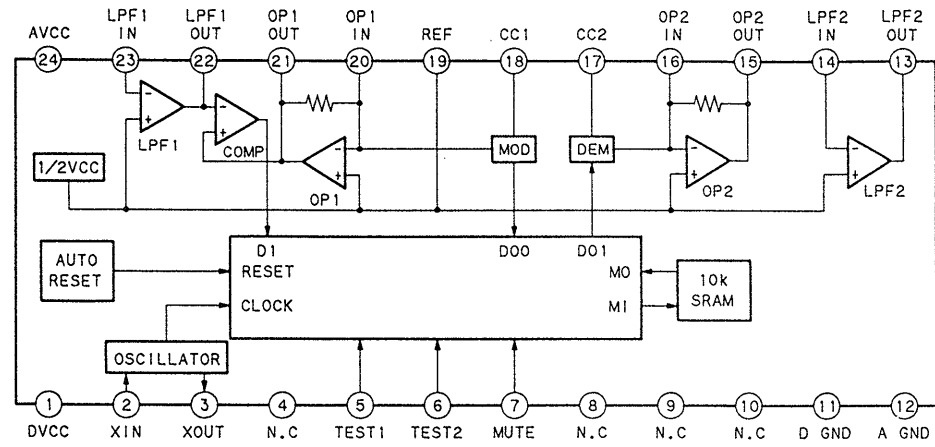
Note:  
• : parts extracted from the component side.  
• : Pattern from the side which enable seeing.

## • IC Block Diagrams

**IC250 SAA6579T**

**IC251 RC4558P**

**IC802 MC14052BCP**




IC806 M65843FP



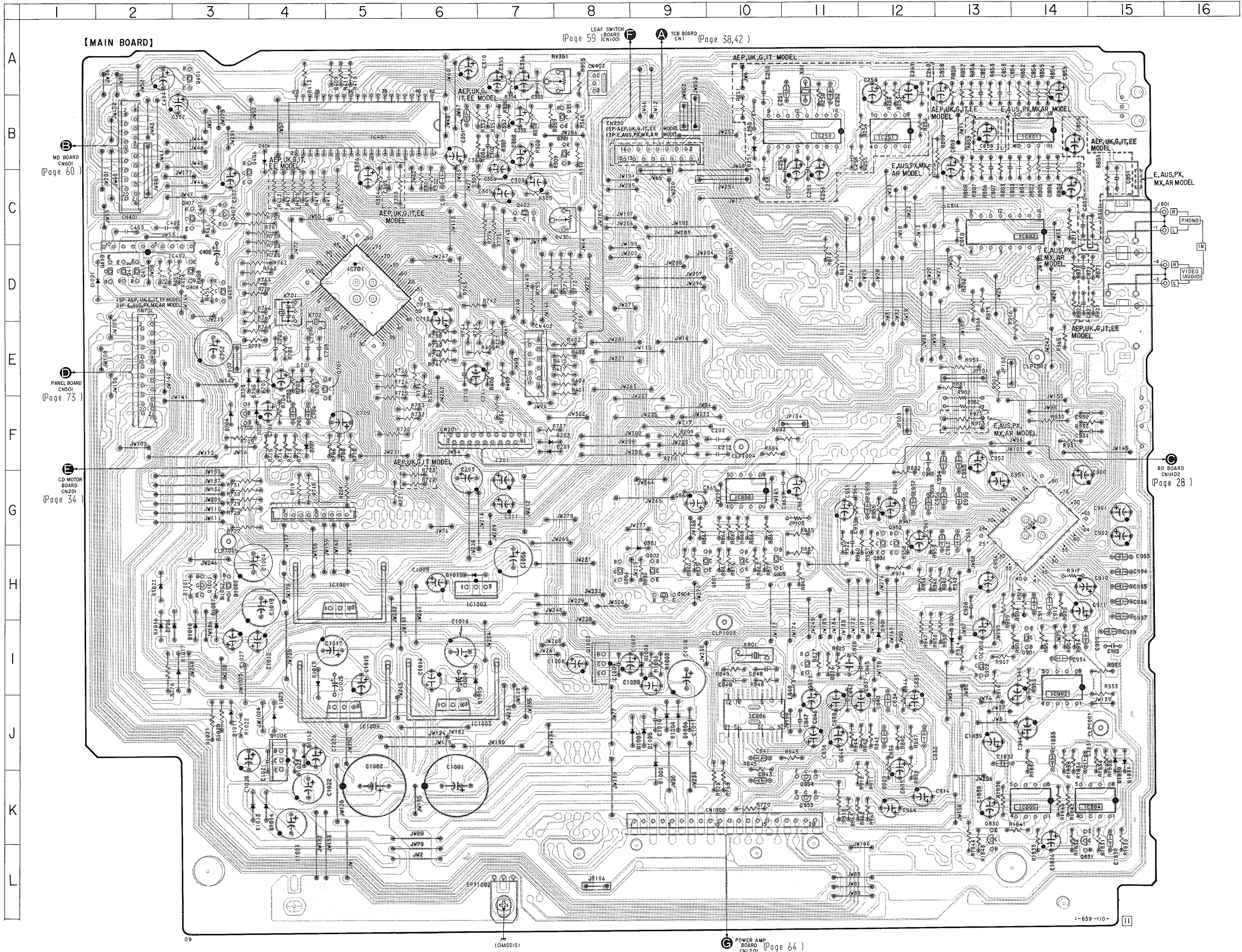
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D201	F-8	IC802	C-14
D202	F-8	IC804	K-14
D251	B-10	IC805	K-14
D401	B-4	IC806	J-10
D701	E-4	IC808	G-10
D702	F-4	IC831	L-14
D703	E-3	IC901	G-14
D704	F-3	IC902	J-12
D705	E-4	IC1001	H-5
D706	I-2	IC1002	H-6
D707	F-4	IC1003	J-6
D801	H-9	IC1004	J-5
D901	I-12		
D902	I-13	Q301	B-8
D1001	K-9	Q351	B-8
D1003	J-9	Q401	A-3
D1004	J-9	Q402	C-7
D1005	J-9	Q403	C-3
D1006	J-9	Q406	B-4
D1007	H-3	Q407	C-3
D1008	I-9	Q408	D-3
D1009	I-6	Q409	D-3
D1010	I-4	Q410	D-2
D1011	J-3	Q411	D-2
D1012	J-4	Q412	D-2
D1013	K-4	Q701	E-5
D1014	K-4	Q801	H-10
D1015	H-6	Q802	H-9
D1016	I-2	Q803	H-10
D1017	I-3	Q804	H-9
D1018	I-3	Q805	H-10
D1021	D-1	Q806	H-8
D1022	H-2	Q820	I-11
D1023	J-4	Q830	K-13
D1830	K-15	Q901	I-14
D1831	K-15	Q902	I-13
		Q951	H-12
IC250	B-11	Q952	G-12
IC251	B-12	Q953	K-11
IC401	B-5	Q954	K-11
IC402	D-2	Q1001	H-3
IC701	D-5	Q1002	H-3
IC702	F-3	Q1003	I-8
IC801	B-14	Q1006	J-4

Note:

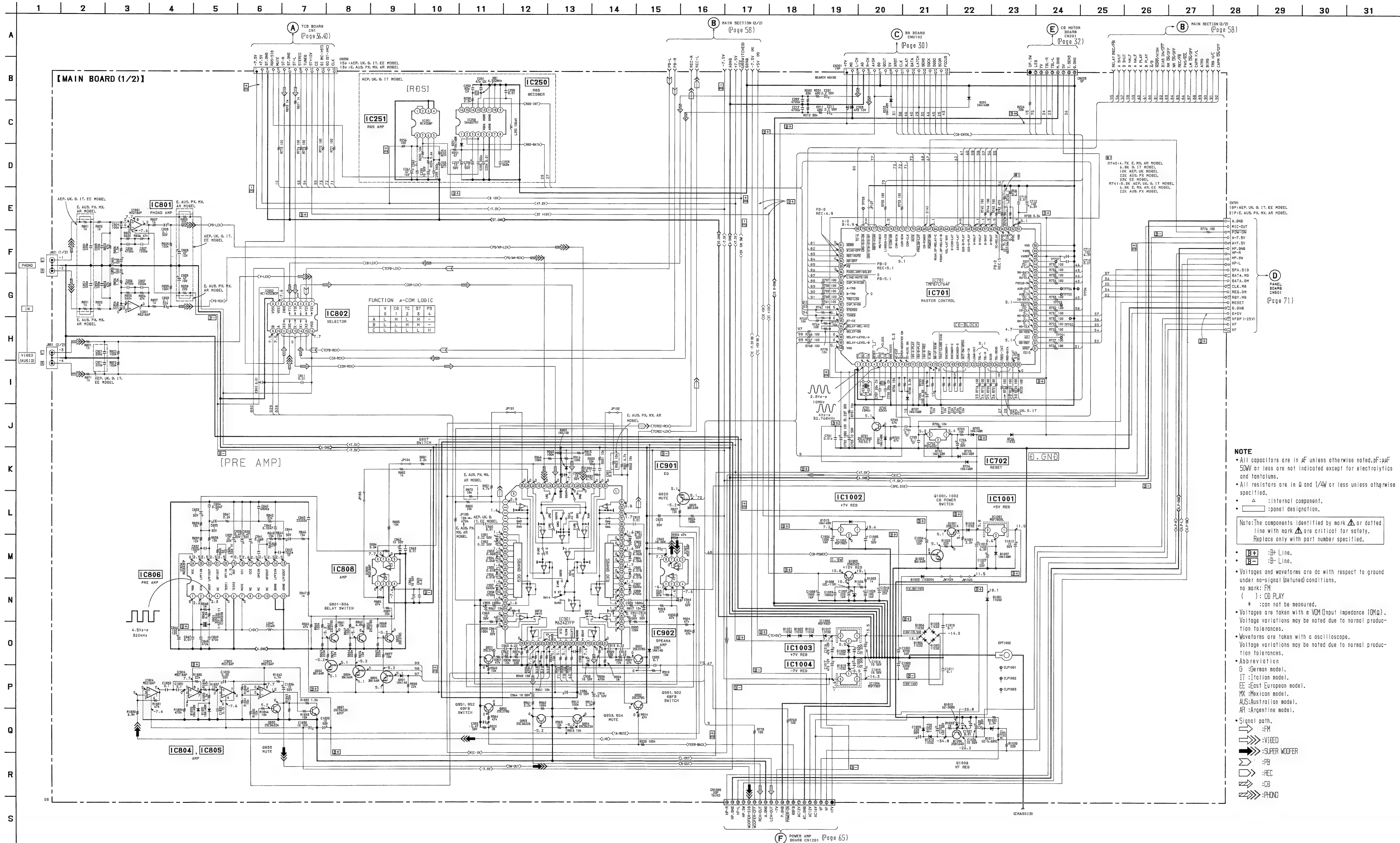
- : parts extracted from the component side.
- : parts mounted on the conductor side.
- △ : internal component.
- : Pattern from the side which enable seeing.
- Abbreviation
  - G : German model.
  - IT : Italian model.
  - EE : East European model.
  - MX : Mexican model.
  - AUS : Australian model.
  - AR : Argentine model.

5-13. PRINTED WIRING BOARD — MAIN SECTION —  
• See page 16 for Circuit Boards Location.

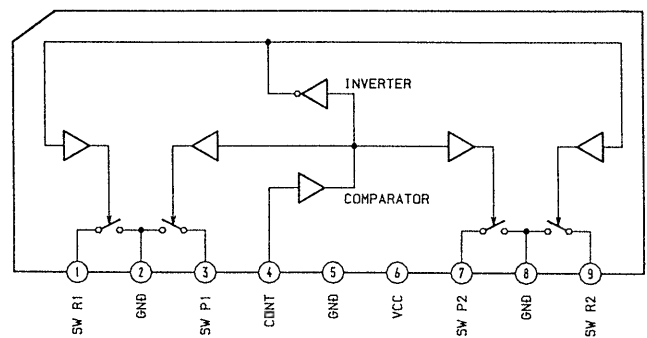




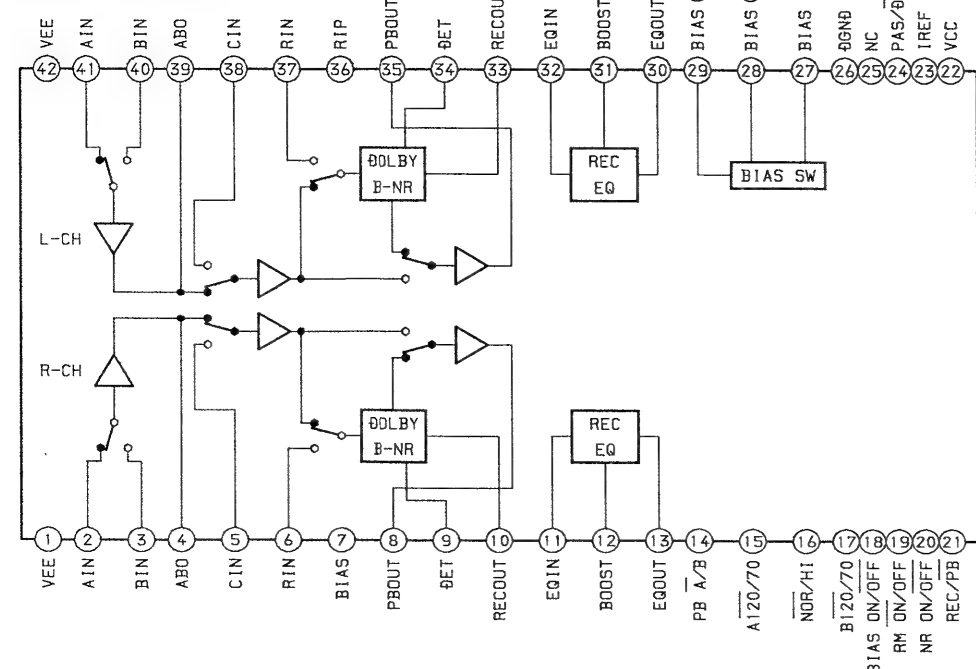
5-14. SCHEMATIC DIAGRAM — MAIN SECTION —  
• See page 78 for IC Pin Function. (IC701)



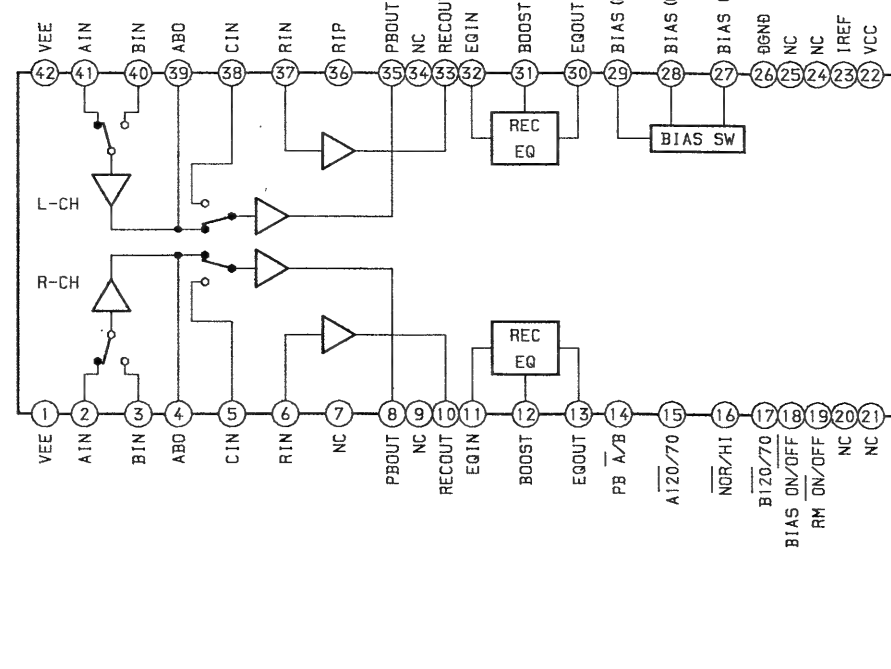
- IC Block Diagrams

IC602  $\mu$ PC1330HA

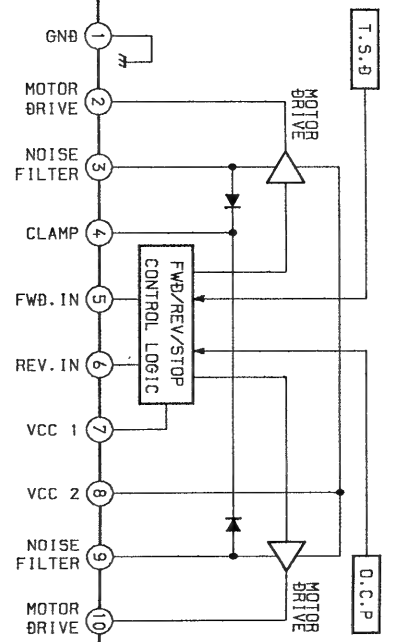
IC901 HA12195T



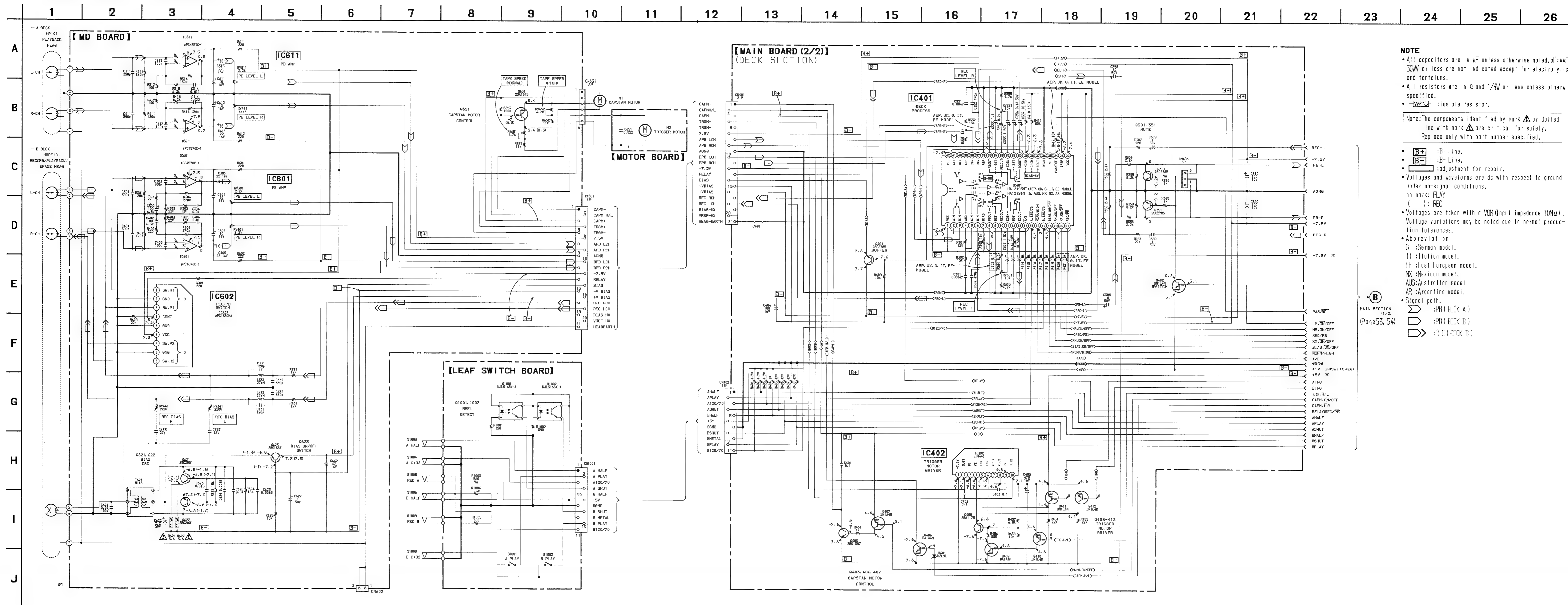
IC901 HA12196T




IC902 LB1641











**5-15. SCHEMATIC DIAGRAM — DECK SECTION —**



**NOTE**

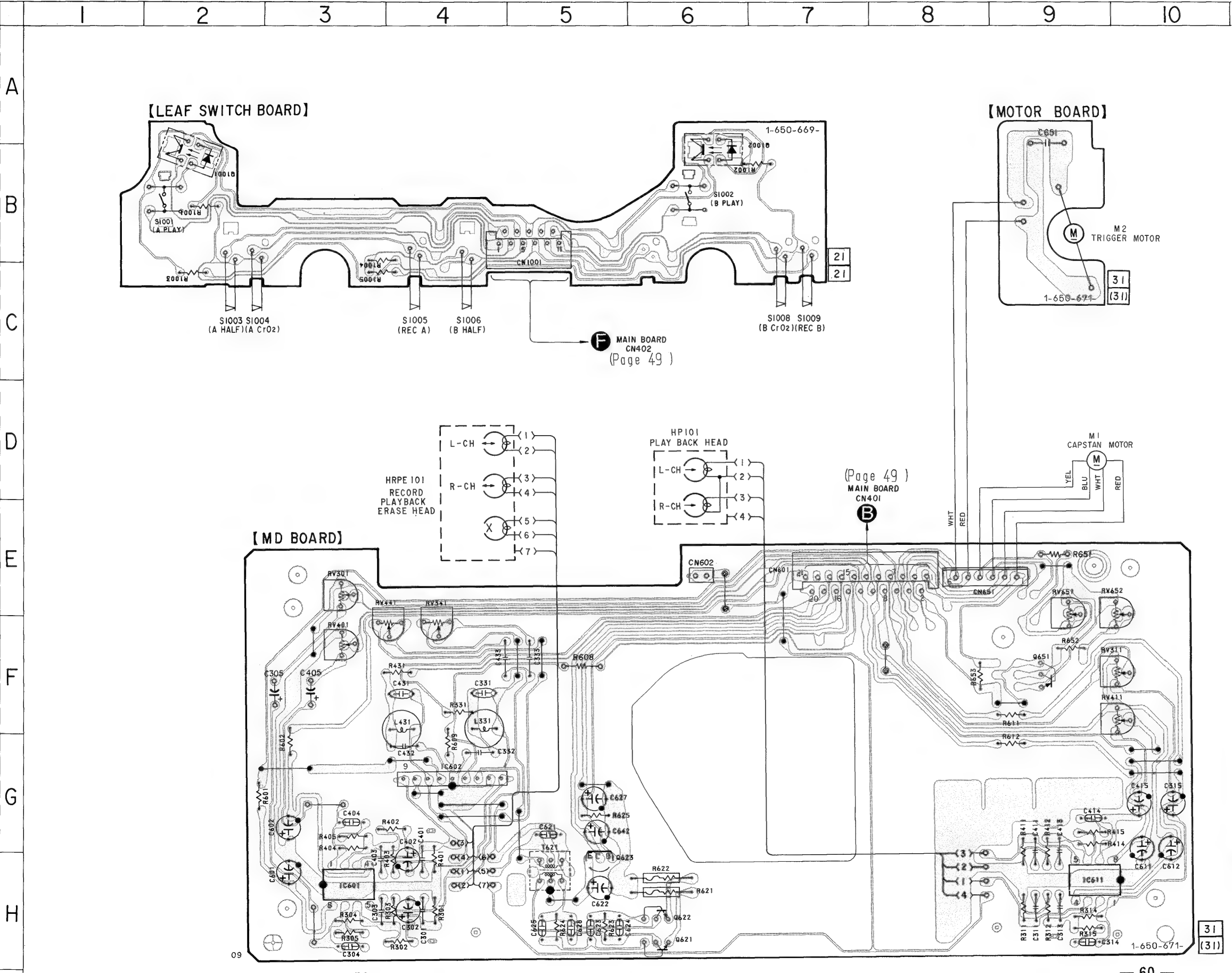
- All capacitors are in  $\mu\text{F}$  unless otherwise noted, pF:  $\mu\text{F}$  50W or less are not indicated except for electrolytic and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
-  :fusible resistor.

Note: The components identified by mark  or dotted line with mark  are critical for safety.  
Replace only with part number specified.

-  :B+ Line.
-  :B- Line.
-  :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.  
no mark: PLAY  
( ) : REC
- Voltages are taken with a VOM (input impedance 10M $\Omega$ )  
Voltage variations may be noted due to normal production tolerances.
- Abbreviation  
G :German model.  
IT :Italian model.  
EE :East European model.  
MX :Mexican model.  
AUS:Australian model.  
AR :Argentine model.
- Signal path.  
 :PB (DECK A)  
 :PB (DECK B)  
 :REC (DECK B)



5-16. PRINTED WIRING BOARD — DECK SECTION —  
• See page 16 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
IC601	H-3
IC602	G-4
IC611	H-9
Q621	H-6
Q622	H-6
Q623	H-5
Q651	F-9
Q1001	B-2
Q1002	B-6

Note:  
• ○ : parts extracted from the component side.  
• □ : Pattern from the side which enable seeing.

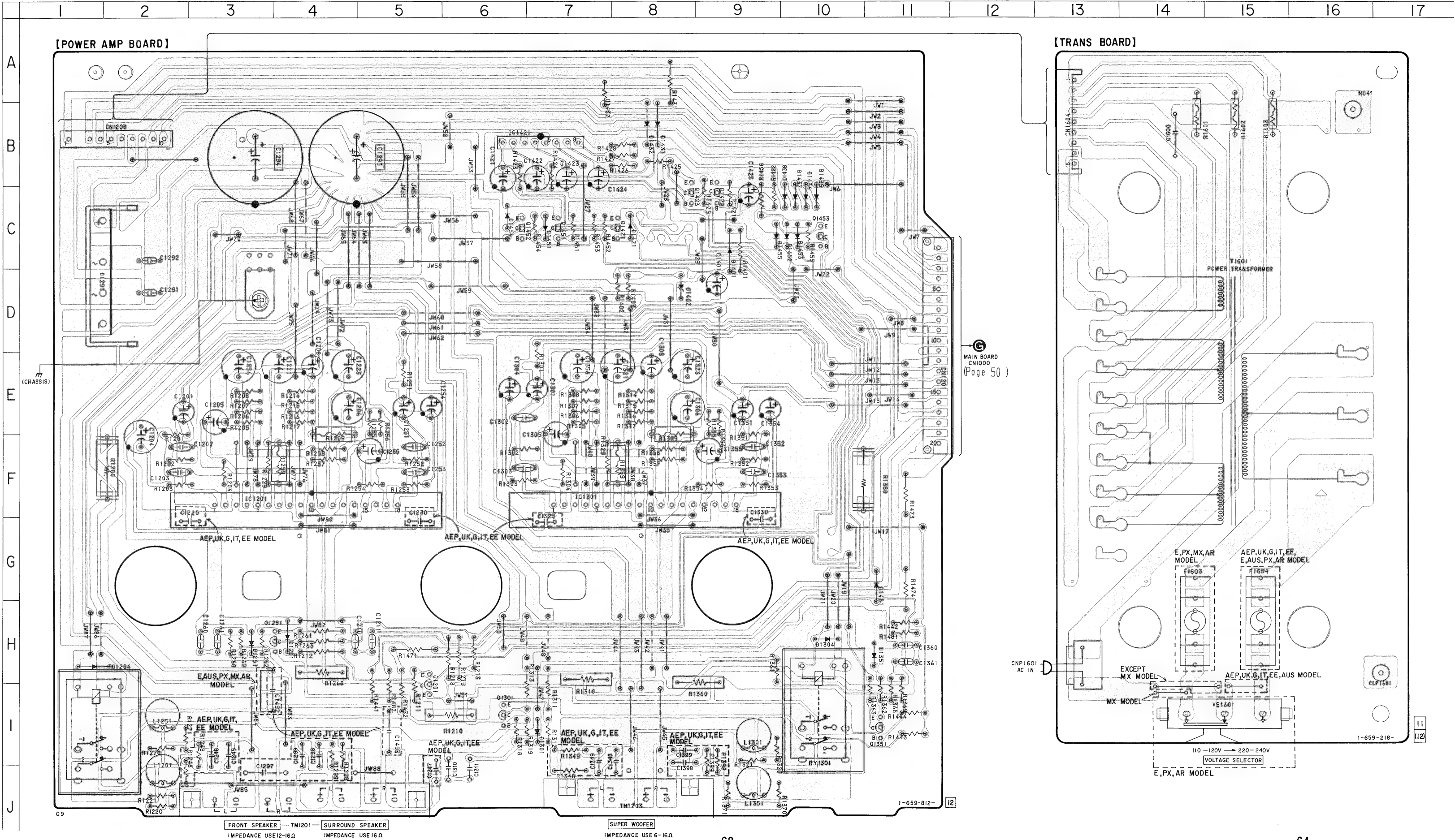
5-17. PRINTED WIRING BOARD — POWER SECTION —  
• See page 16 for Circuit Boards Location.

• Semiconductor Location

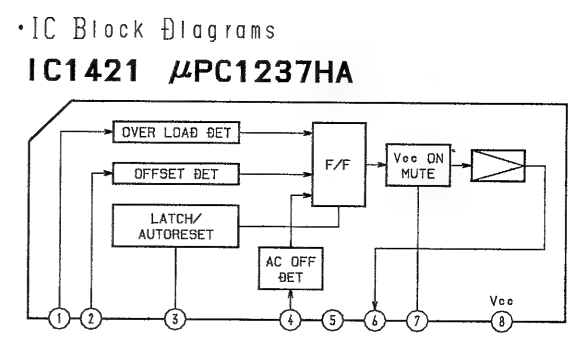
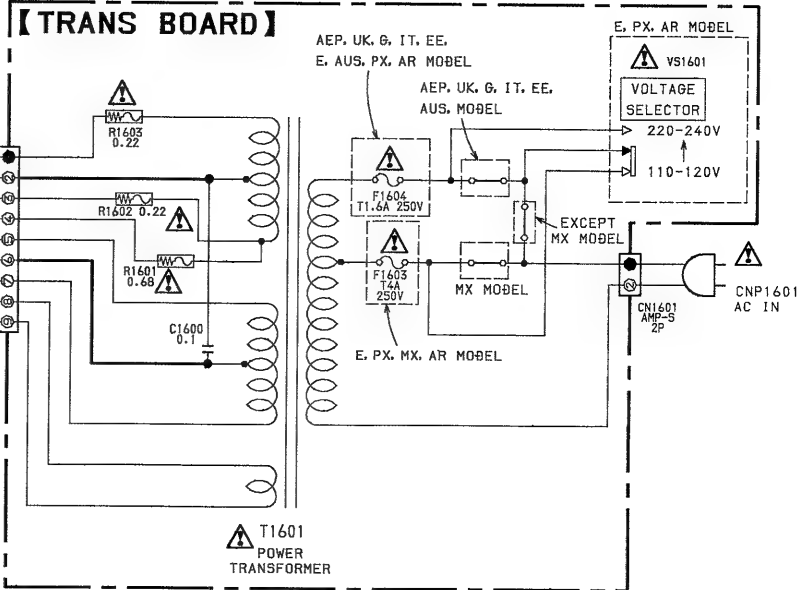
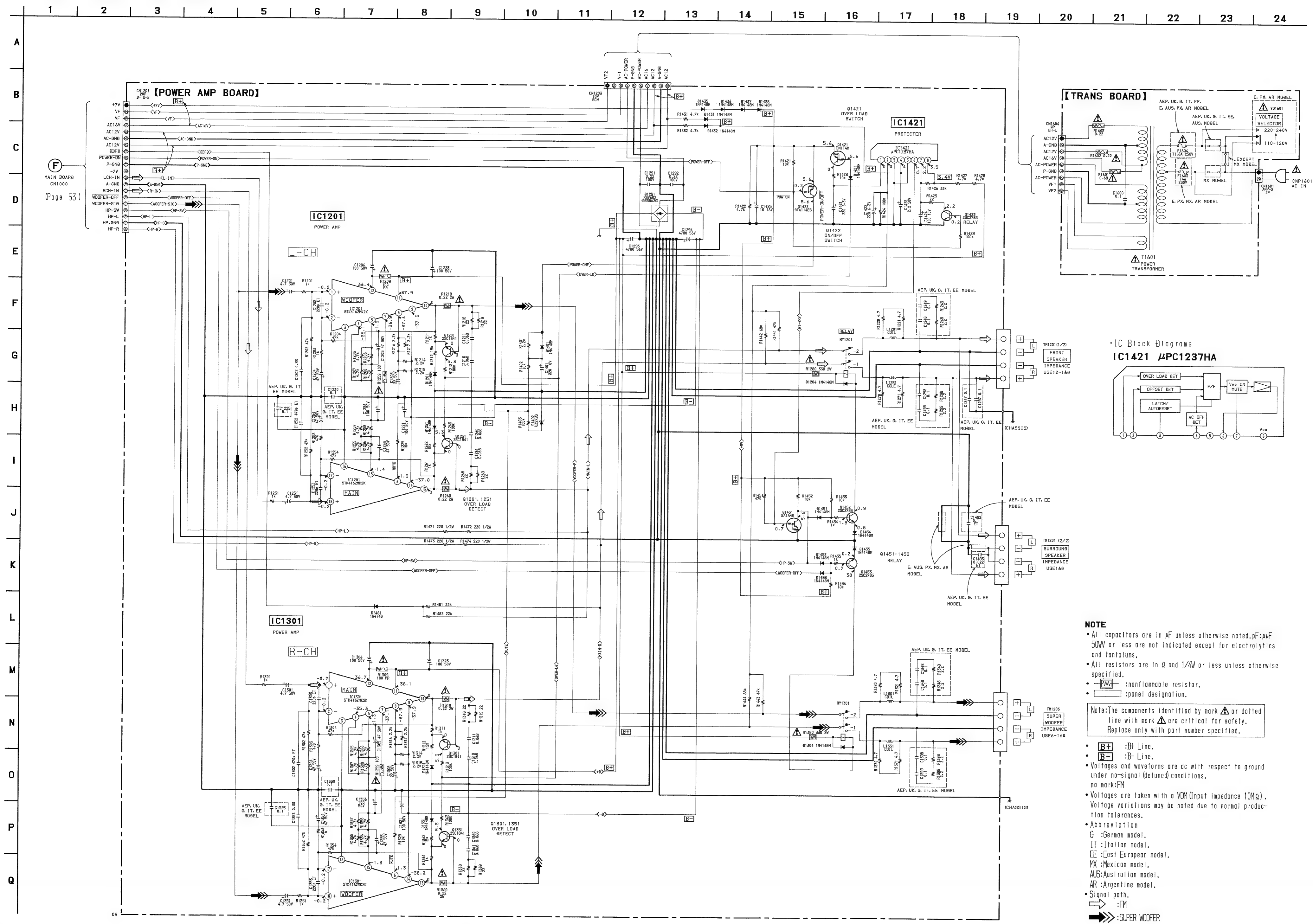
Ref. No.	Location
D1201	H-4
D1204	H-2
D1251	H-3
D1291	D-1
D1301	I-7
D1304	H-10
D1351	H-11
D1401	C-9
D1402	D-8
D1421	C-8
D1431	B-8
D1432	B-8
D1435	B-10
D1436	B-10
D1437	B-10
D1438	B-10
D1451	C-7
D1452	C-10
D1453	C-10
D1454	C-6
D1455	C-9
D1481	G-11
IC1201	F-3
IC1301	F-7
IC1421	B-6
Q1201	H-5
Q1251	H-3
Q1301	I-6
Q1351	I-11
Q1421	C-8
Q1422	C-9
Q1423	C-8
Q1451	C-7
Q1452	C-6
Q1453	C-10

Note:

- : parts extracted from the component side.
- : Pattern from the side which enable seeing.
- Abbreviation
  - G : German model.
  - IT : Italian model.
  - EE : East European model.
  - MX : Mexican model.
  - AUS : Australian model.
  - AR : Argentine model.



5-18. SCHEMATIC DIAGRAM — POWER SECTION —



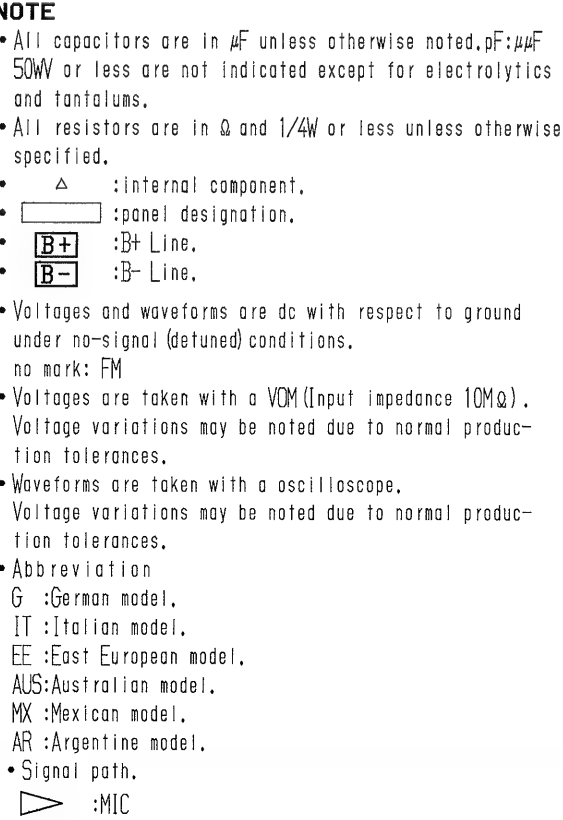
**NOTE**

- All capacitors are in  $\mu F$  unless otherwise noted.  $pF$ :  $\mu F$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4W$  or less unless otherwise specified.
- : nonflammable resistor.
- : panel designation.

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

- : B+ Line.
- : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (input impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Abbreviation  
G : German model.  
IT : Italian model.  
EE : East European model.  
MX : Mexican model.  
AUS : Australian model.  
AR : Argentine model.
- Signal path.  
 : FM  
 : SUPER WOOFER









## 5-21. IC PIN FUNCTIONS

### • IC501 GRAPHIC CONTROL (ASD0204-012-3BA)

Pin No.	Pin Name	I/O	Function
1	V <sub>DD</sub>	—	+5V
2	$\overline{\text{LED8}}$	O	LED drive signal output.
3, 4	$\overline{\text{LED7, 6}}$	O	Not used.
5–9	$\overline{\text{LED5–1}}$	O	LED drive signal output.
10	$\overline{\text{RESET}}$	I	Reset signal input.
11	X2	O	} X'tal (4 MHz).
12	X1	I	
13	IC (V <sub>pp</sub> )	—	GND
14	XT2	I	Not used.
15	JOG B	I	AMS encoder signal input.
16	V <sub>DD</sub>	—	+5V
17, 18	$\overline{\text{LED10, 9}}$	O	LED drive signal output.
19	KEY SEL	O	Key select control.
20	VOL B	I	Volume encoder signal input.
21	REQ. GM	O	Request signal from/to master control.
22	CLK MG	I	Serial clock input.
23	DATA GM	O	Serial data output.
24	DATA MG	I	Serial data input.
25	AV <sub>SS</sub>	—	GND
26–29	SPEANA 4–1	I	Spectram analyzer signal input.
30–33	KEY 4–1	I	Key matrix input.
34	AV <sub>DD</sub>	—	} +5V
35	AV <sub>REF</sub>	—	
36	VOL A	I	Volume encoder signal input.
37	JOG A	I	AMS encoder signal input.
38	RDY MG	I	RDY signal from master control.
39	SIRCS	I	SIRCS signal input.
40	V <sub>SS</sub>	—	GND
41	DOR SW	I	CD door open detection input.
42	LED SELECT	O	LED select signal output.
43–45	$\overline{\text{LED13–11}}$	O	LED drive signal output.
46	V <sub>DD</sub>	—	+5V
47, 48	LEDS7, 6	O	Not used.
49, 50	LEDS5, 4	O	Not used. (Pull down)
51–53	LEDS3–1	O	LED drive signal output.
54–78	SEG32–8	O	FL segment signal output.
79	V. LOAD	—	–25V for FL
80–86	SEG7–1	O	FL segment signal output.
87–100	GR14–1	O	FL grid signal output.

• Abbreviation

FL : FLUORESCENT INDICATOR TUBE

• IC701 MASTER CONTROL (TMP87CS64YF)

Pin No.	Pin Name	I/O	Function
1	V <sub>SS</sub>	—	GND
2	XOUT	O	} X'tal (10 MHz).
3	XIN	I	
4	RESET	I	Reset signal input.
5	XOUT	O	} X'tal for clock (32.768 kHz)
6	XIN	I	
7	GND (test)	—	GND
8	AC CUT	I	Back up signal input.
9	SUPER WOOFER ON	O	Super woofer ON/OFF control.
10	ST-MUTE ON	O	Mute signal output for tuner.
11	180-A-PLAY	I	} Tape detection signal input. (Connected to GND)
12	180-B-PLAY	I	
13	180-B-REC	I	
14	V. DET	I	Voltage detection (Pull up).
15	BD-UP (5CD)	I	Disc table up detect.
16	TRAY CLOSE (1CD)	I	Not used.
17	ENCODER-1	I	} Input selector control signal output. (Not used)
18	ENCODER-2	I	
19	ENCODER-3	I	
20	OUT SW OPEN	I	Out switch signal input. (Not used)
21	LOAD IN	O	} Loading motor control signal output. (Not used)
22	LOAD OUT	O	
23	TBL-L	O	} Table motor control signal output.
24	TBL-R	O	
25	SCOR	I	Sub-code sync signal input.
26	TBL-SENS	I	CD Table sensor signal input.
27	RDS INT	I	RDS data start input.
28	RDS DATA	I	RDS data output.
29	DF LAT	O	Latch signal for digital filter.
30	SENS	I	Table sence signal input.
31	XRST	O	Reset signal output for CD.
32	MG-RDY	I	RDY signal from graphic control.
33	ADJ	I	Test mode input.
34	GM-REQ	I	Request signal from graphic control.
35	MG-CLK	O	Clock signal to graphic control.
36	GM-DATA	I	Data input from graphic control.
37	MG-DATA	O	Data output to graphic control.
38	CD-CLK	O	Clock output. Serial bus line.
39	ADJ-2	I	Test mode input.
40	CD-DATA	O	Data output. Serial bus line.

• Abbreviation

FL : FLUORESCENT INDICATOR TUBE



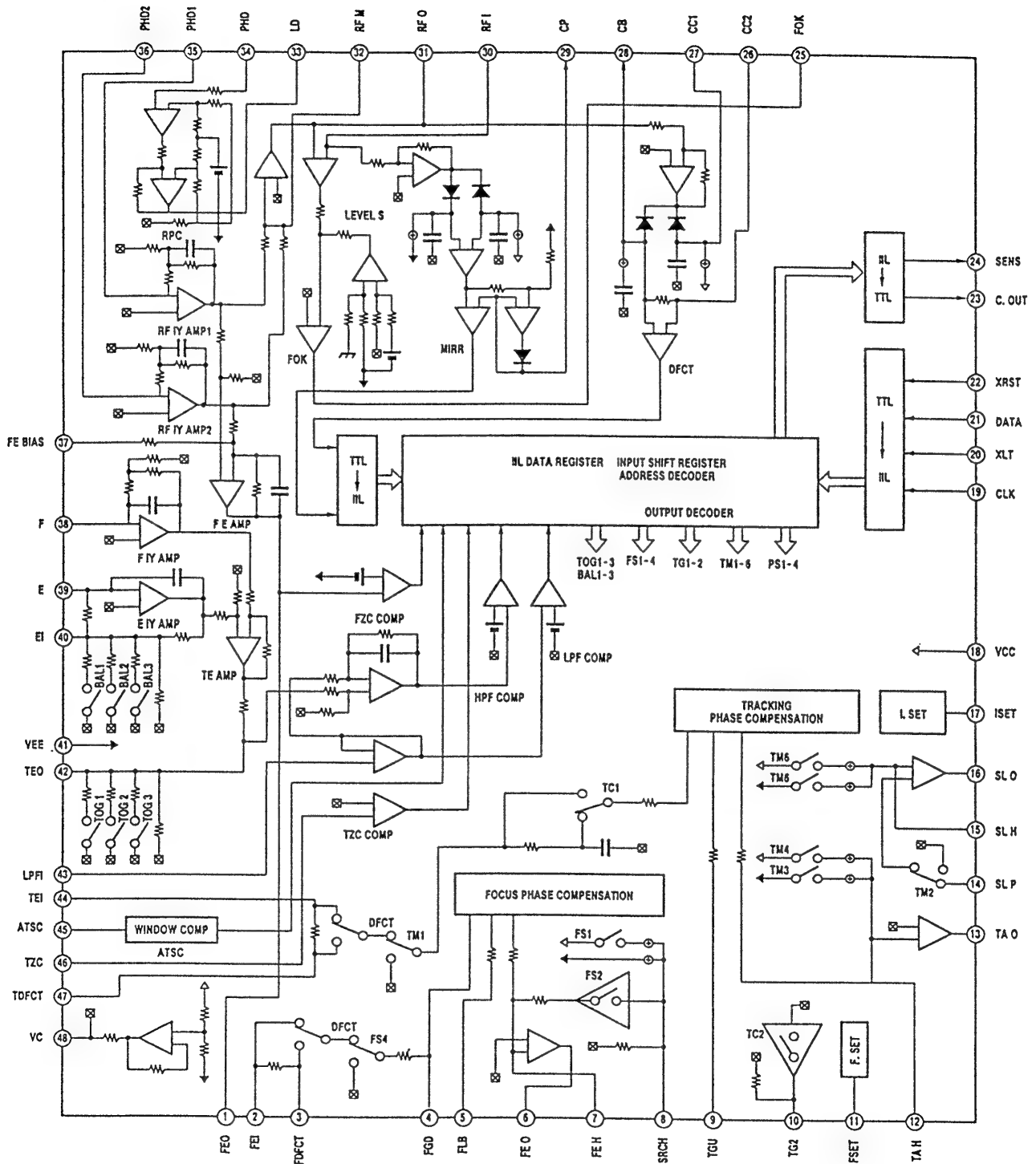
Pin No.	Pin Name	I/O	Function
41	AUB IN	I	} Audio bus in/output.
42	AUB OUT	O	
43	FOCUS SW	O	Focus switching signal output.
44	SQ-CLK	O	Subcode Q data read clock output.
45	SQ-DATA	I	Subcode Q data input.
46	X-LAT	O	Latch signal digital signal processor.
47	TEST	I	Test land.
48	VAREF	I	Analog reference voltage input.
49	VAss	—	} GND
50	Vss	—	
51	VDD	—	+5V
52	SPEC	I	} Not used.
53	DESTINATION	I	
54	DISC SENS	I	
55	TC RELAY	O	REC/PB select signal output.
56	A-SHUT	I	} Control signal input from deck.
57	B-SHUT	I	
58	B-HALF	I	
59	A-HALF	I	
60	220-A-PLAY	I	
61	220-B-PLAY	I	
62	62427 LAT	O	PLL latch output.
63	K-CON-LAT	O	Not used.
64	VOL LAT (AV)	O	Latch signal for electrical volume. (Not used)
65	FRONT SP RELAY B	O	} Not used.
66	REAR SP RELAY C	O	
67	POWER ON	O	Power on signal output.
68	CD POWER	O	CD power control signal output.
69	PROLOG LAT	O	Not used.
70	MUTE	O	Mute signal for AMP.
71	COM CLK	O	PLL clock output. (PLL, Function, Graphic Equalizer)
72	COM DIN	I	PLL data input. (PLL, Function, Graphic Equalizer)
73	COM DATA	O	PLL data output. (PLL, Function, Graphic Equalizer)
74	K CON ON	O	Not used.
75	LIDDED LED	O	Disc No. LED drive signal output.
76	MD/VIDEO	O	Not used.
77	DBFB-HIGH	O	DBFB switching signal output.
78	URG STB STDBY	I	} Not used.
79	URG SIG ON	O	
80	TC A	O	Deck A, B select output.



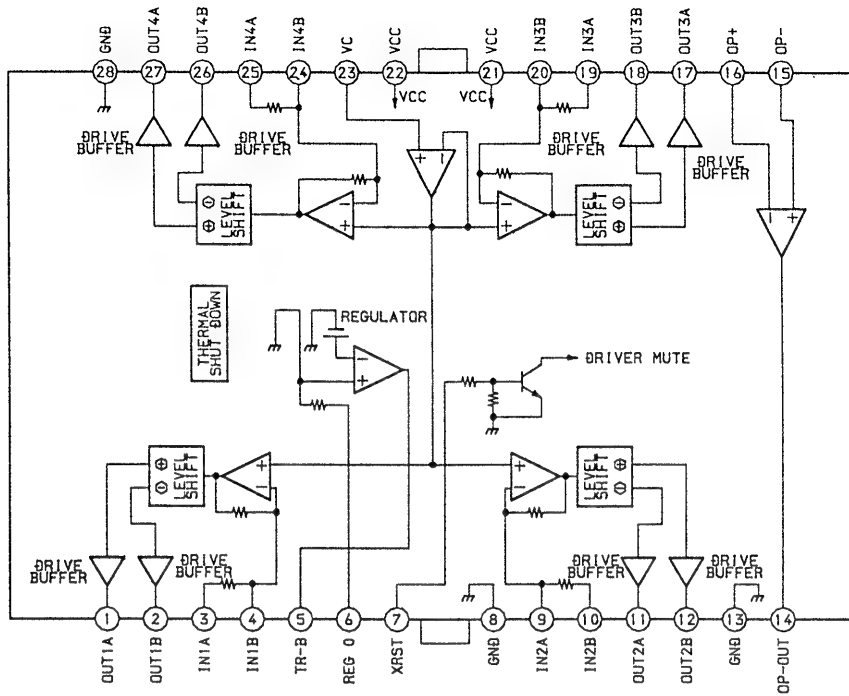
Pin No.	Pin Name	I/O	Function
81	$\overline{\text{NORM}}$	O	NORMAL/HIGH control signal output.
82	$\overline{\text{BIAS OFF}}$	O	Bias oscillation output.
83	$\overline{\text{REC MUTE}}$	O	Mute output.
84	$\overline{\text{NR OFF}}$	O	Dolby ON/OFF signal output.
85	$\overline{\text{PB}}$	O	REC/PB control signal output.
86	$\overline{\text{PASS. AMP/DOLBY}}$	O	Dolby switching signal output.
87	$\overline{\text{LINE MUTE ON}}$	O	Mute signal output for deck.
88	$\overline{\text{CAP. M-HIGH}}$	O	Capstan motor control signal output.
89	A-TRG	O	} Trigger motor control signal output.
90	B-TRG	O	
91	$\overline{\text{TRG LOW}}$	O	Trigger motor high/low control signal output.
92	$\overline{\text{CAP M ON}}$	O	Capstan motor ON/OFF control signal output.
93	$\overline{\text{STEREO}}$	I	Stereo detection signal from tuner.
94	$\overline{\text{TUNED}}$	I	Tuned detection signal from tuner.
95	ST-CE	O	Latch signal output for tuner.
96	$\overline{\text{DELAY SEL MIC}}$	O	Not used.
97	$\overline{\text{DELAY ON}}$	O	ECHO delay ON/OFF control signal output.
98	DELAY LEVEL A	O	} ECHO delay level control signal output.
99	DELAY LEVEL B	O	
100	VDD	—	+5V

## 5-22. IC BLOCK DIAGRAMS — CD SECTION —

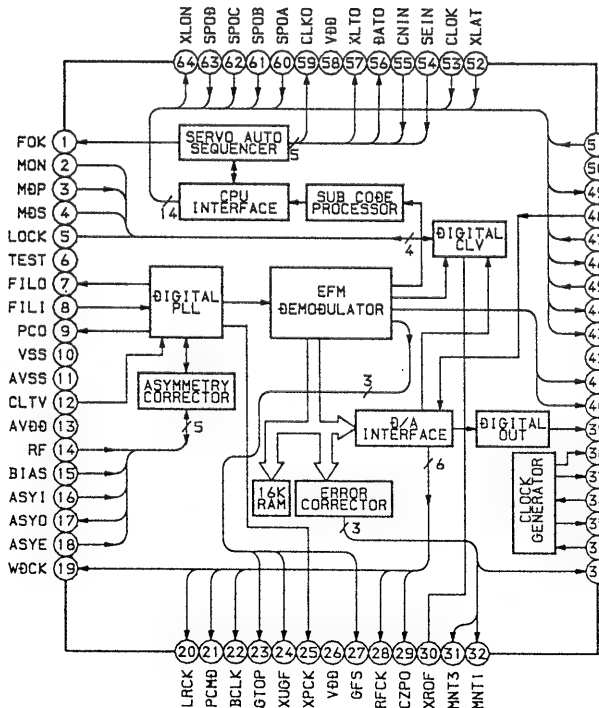
IC101 CXA1782BQ



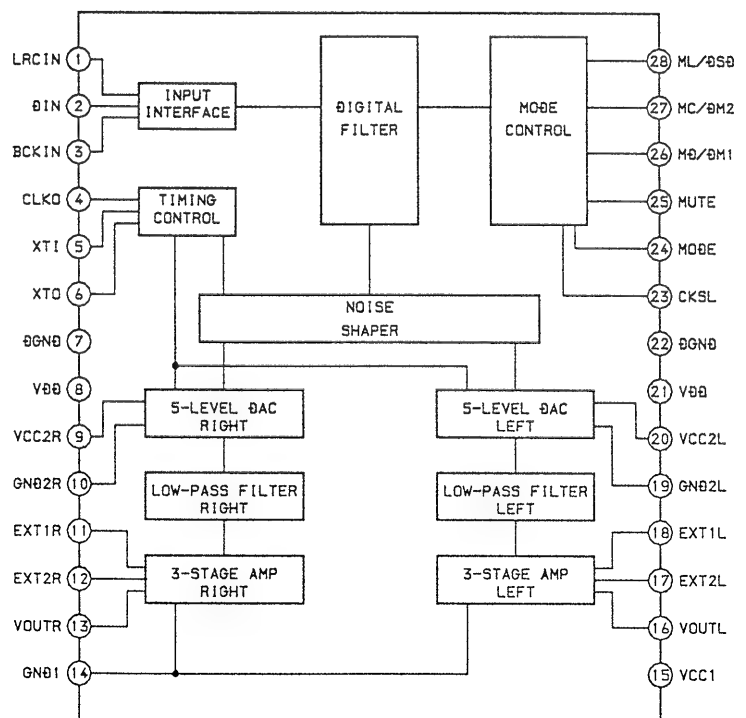
# IC102 BA6397FP



# IC103 CXD2507AQ



# IC104 PCM1710U



## SECTION 6

### EXPLODED VIEWS

#### NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

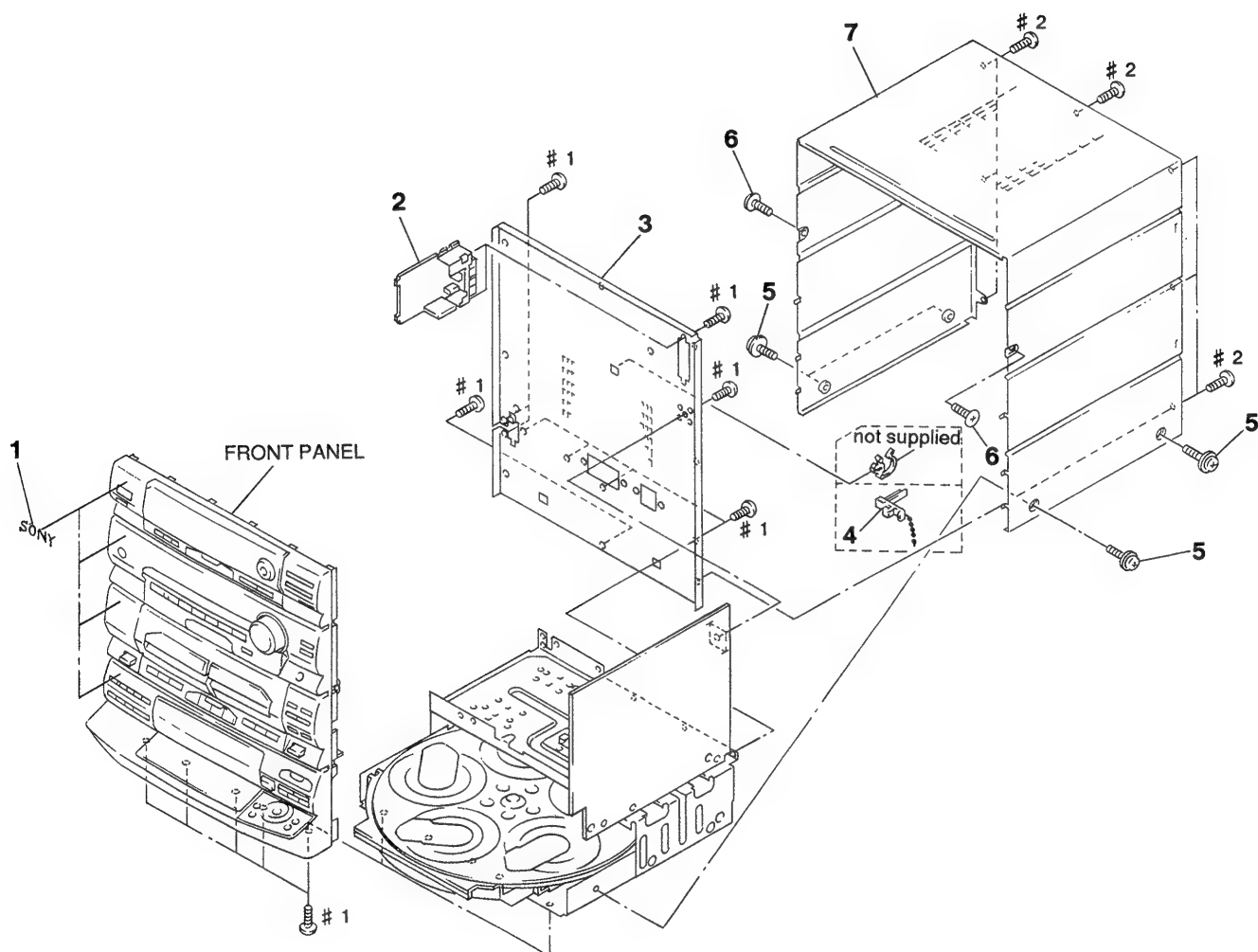
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

#### Abbreviation

G : German model  
 IT : Italian model  
 EE : East European model  
 MX : Mexican model  
 AUS : Australian model  
 AR : Argentine model

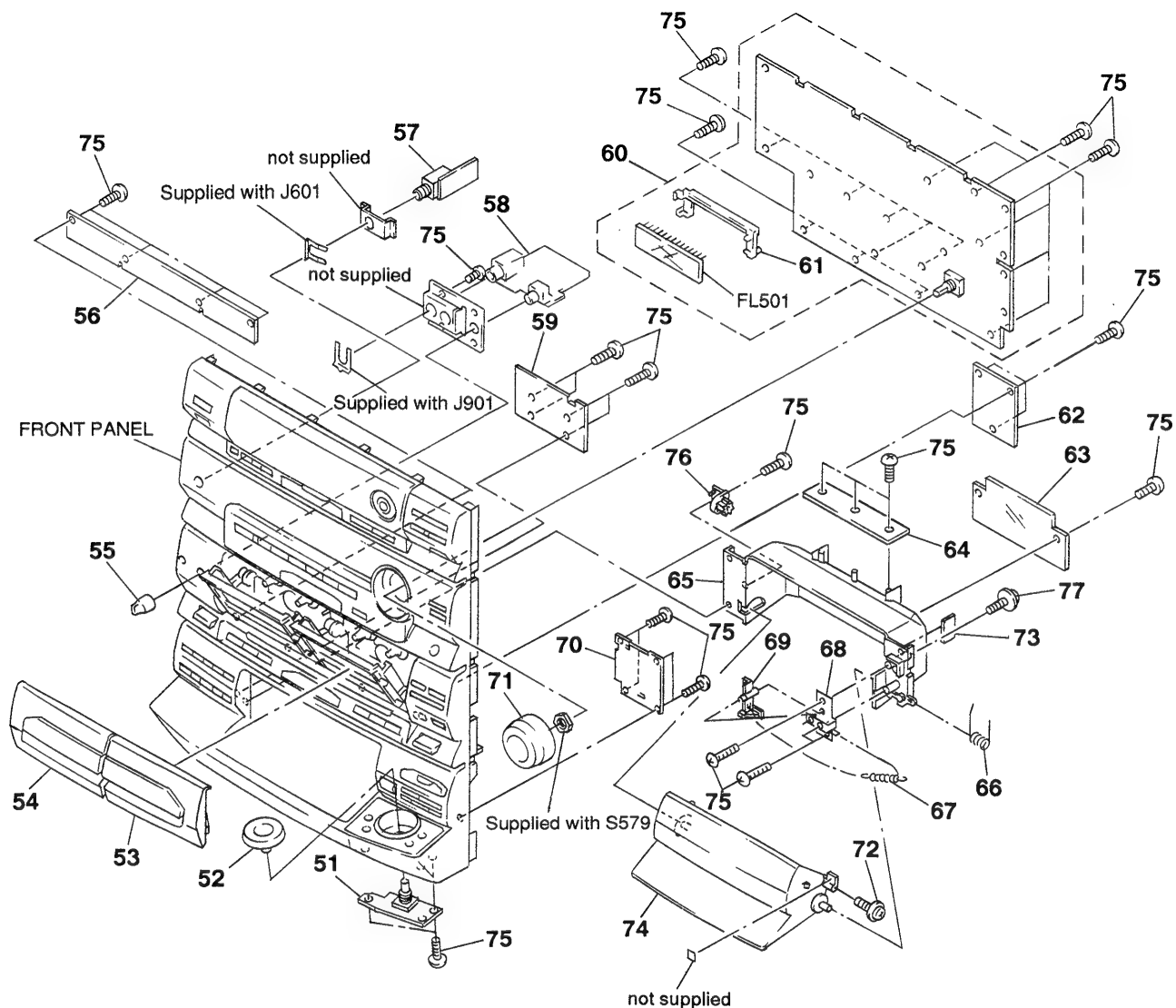
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

#### 6-1. CASE AND BACK PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-963-404-21	EMBLEM (5-A), SONY		* 3	4-978-192-01	PANEL, BACK (E)	
* 2	A-4303-502-A	TCB-17 BOARD, COMPLETE (AEP, UK)		* 3	4-978-192-11	PANEL, BACK (AR)	
* 2	A-4303-503-A	TCB-17 BOARD, COMPLETE (IT, G)		* 3	4-978-192-21	PANEL, BACK (AUS)	
* 2	A-4303-504-A	TCB-17 BOARD, COMPLETE (EE)		* 3	4-978-192-31	PANEL, BACK (PX)	
* 2	A-4303-513-A	TCB-17 BOARD, COMPLETE (E, AUS, PX, MX, AR)		* 3	4-978-192-41	PANEL, BACK (MX)	
* 3	4-978-191-21	PANEL, BACK (AEP)		4	4-956-370-12	BAND, PLUG FIXED (UK, AUS)	
* 3	4-978-191-31	PANEL, BACK (G)		5	4-929-973-01	SCREW (CASE, 3 POINT)	
* 3	4-978-191-41	PANEL, BACK (IT)		6	3-363-099-01	SCREW (CASE 3 TP2)	
* 3	4-978-191-51	PANEL, BACK (UK)		* 7	4-978-177-11	CASE	
* 3	4-978-191-71	PANEL, BACK (EE)					

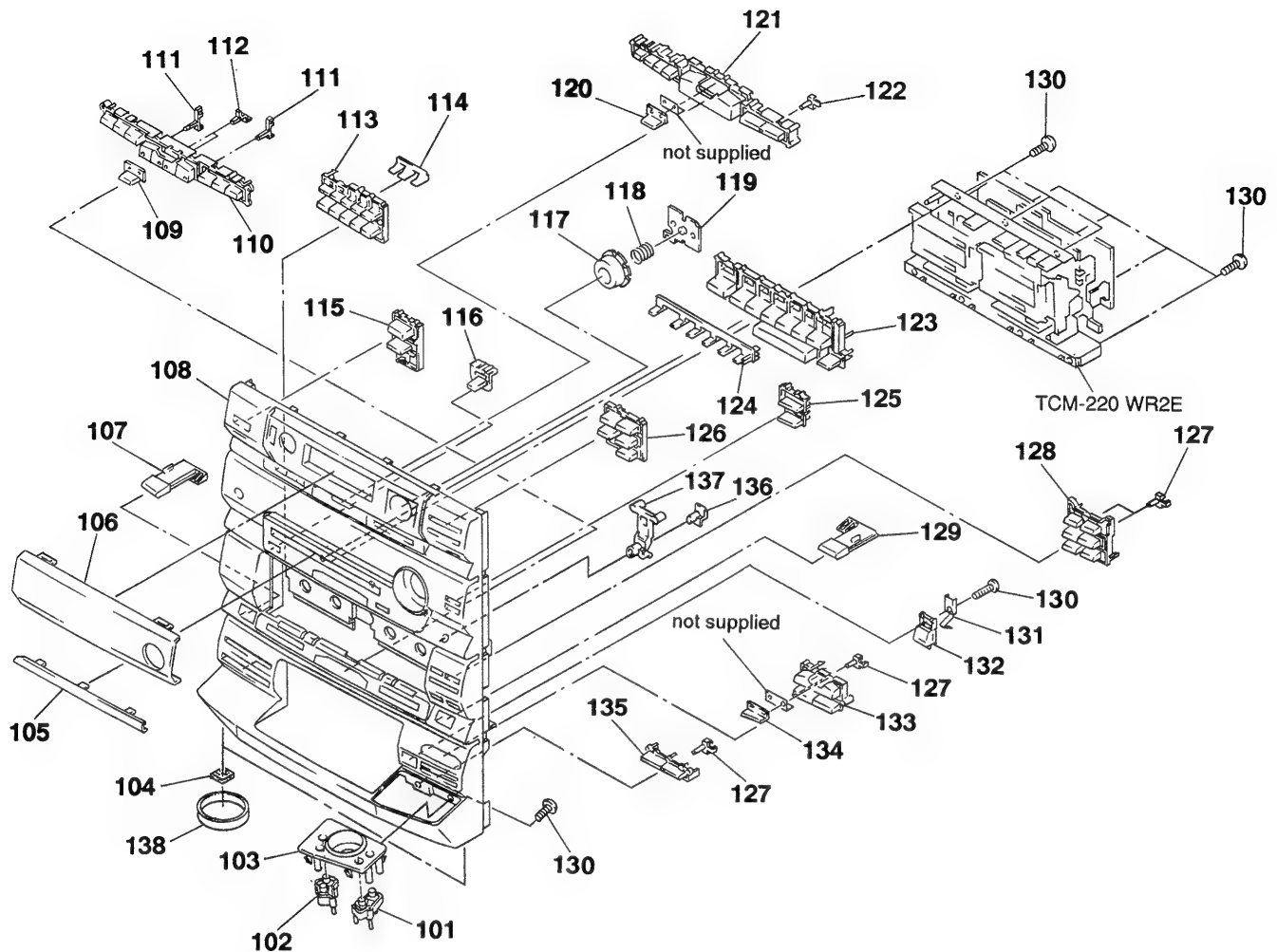
## 6-2. PANEL BOARD SECTION



Ref. No.	Part No.	Description	Remark
* 51	1-659-405-11	CD JOG BOARD	
52	4-978-154-01	KNOB (DISC)	
53	X-4946-636-1	LID (B) ASSY, CASSETTE	
54	X-4946-635-1	LID (A) ASSY, CASSETTE	
55	4-973-644-01	KNOB (MIC) (E, AUS, PX, MX, AR)	
* 56	1-659-413-11	TC CONTROL BOARD	
* 57	1-659-411-11	HP BOARD	
* 58	1-659-414-11	MIC BOARD (E, AUS, PX, MX, AR)	
* 59	1-659-404-11	CD (L) BOARD	
* 60	A-4389-163-A	PANEL BOARD, COMPLETE (AEP, UK, G, IT, EE)	
* 60	A-4389-165-A	PANEL BOARD, COMPLETE (E, AUS, PX, MX, AR)	
61	4-971-014-11	HOLDER, FL TUBE	
* 62	1-659-412-11	TC SW BOARD	
63	4-980-060-01	INDICATOR (COVER)	
* 64	1-659-406-11	CD LED BOARD	

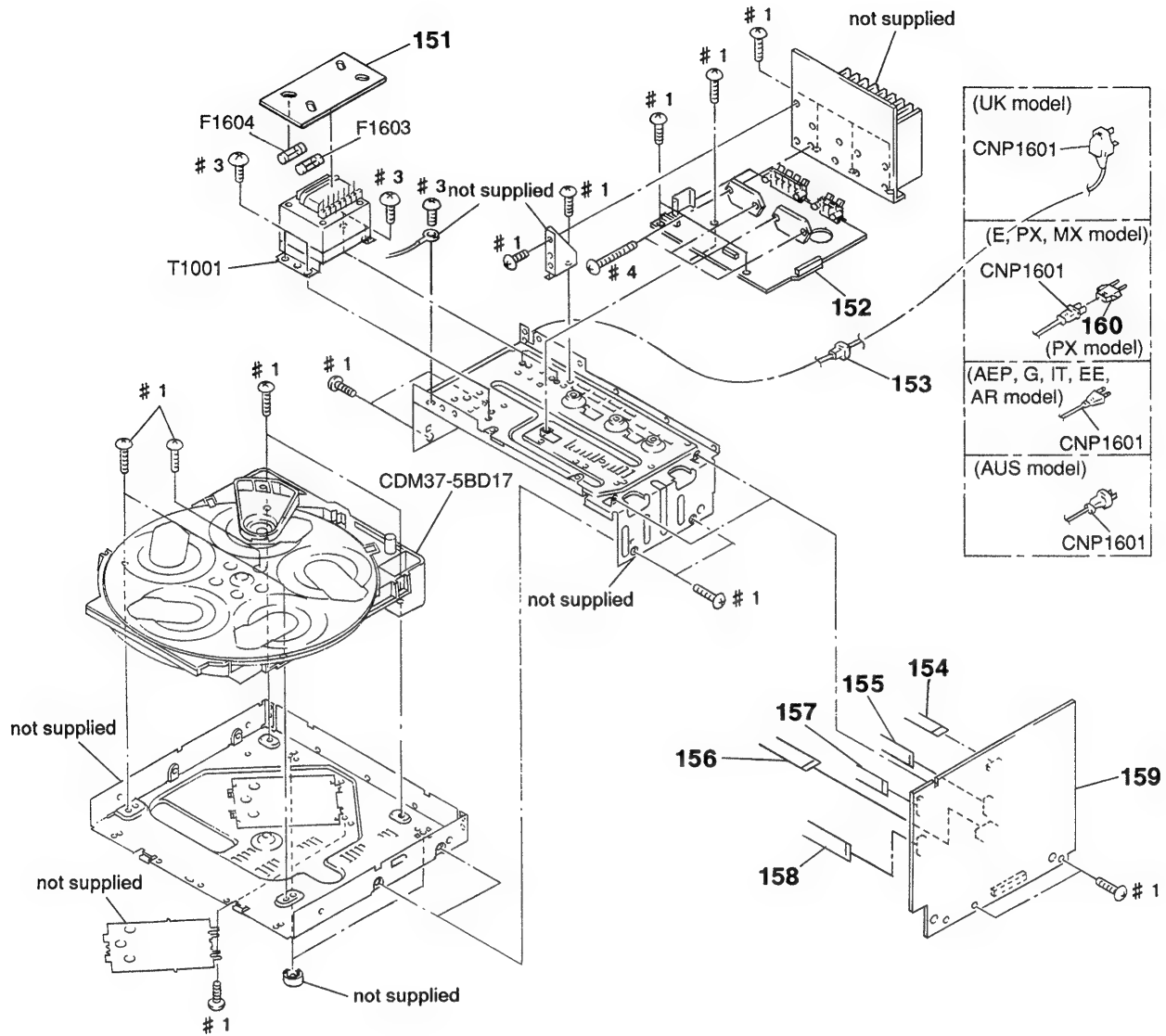
Ref. No.	Part No.	Description	Remark
65	4-978-140-11	COVER (CD)	
66	4-978-171-01	SPRING, TORSION	
67	4-978-170-01	SPRING, TENSION	
* 68	4-978-169-01	BRACKET (OPEN)	
69	4-978-141-01	LEVER, LOCK	
* 70	1-659-409-11	CD (R) BOARD	
71	4-978-142-01	KNOB (V)	
72	4-909-982-11	SCREW, TAPPING	
* 73	1-659-408-11	DOOR SW BOARD	
74	4-978-139-01	LID, DISC	
75	4-951-620-01	SCREW (2. 6X8), +BVTP	
76	3-354-963-21	DAMPER	
77	4-957-577-01	SCREW PTP WH (2. 6X8)	
FL501	1-517-490-21	INDICATOR TUBU, FLUORESCENT	

### 6-3. FRONT PANEL SECTION



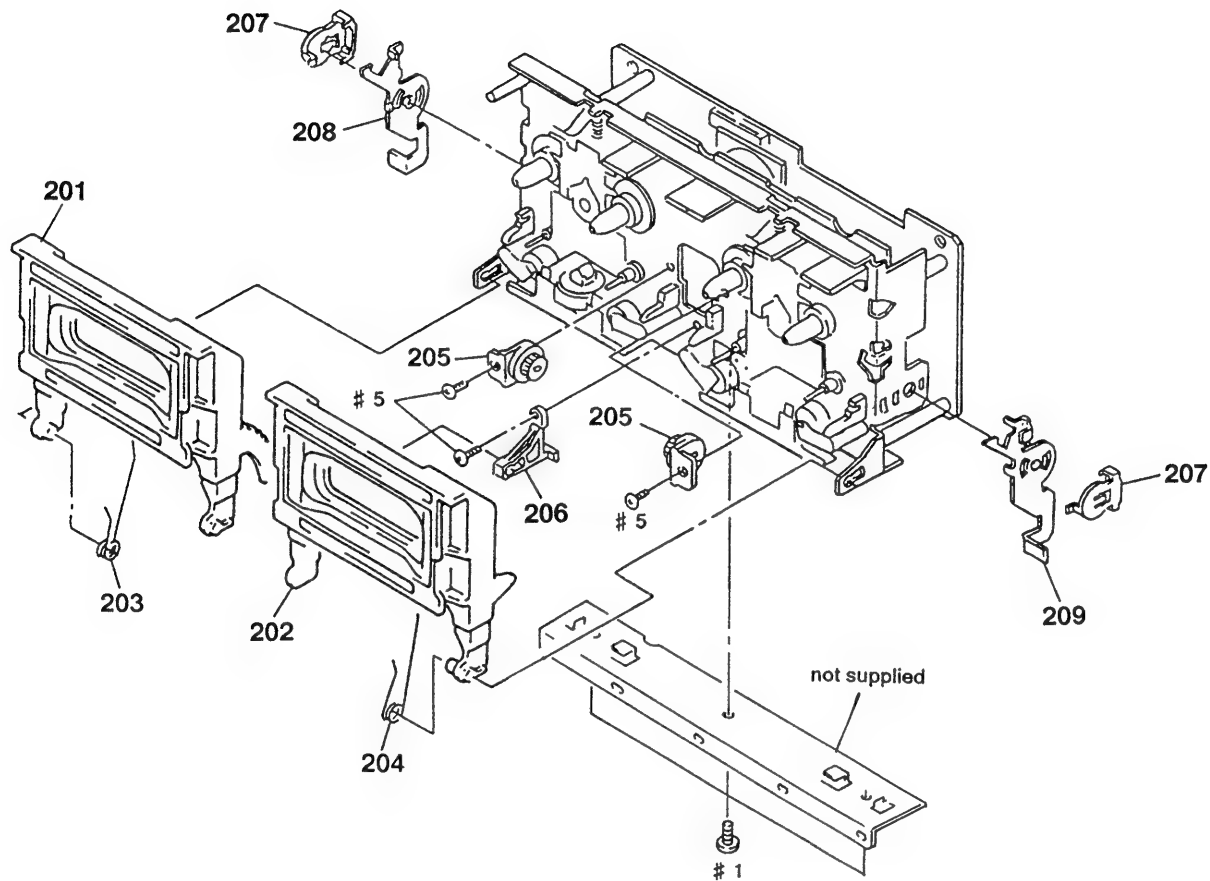
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-978-153-01	BUTTON (PROGRAM)		121	4-978-121-11	BUTTON (BAND)	
102	4-978-712-01	BUTTON (SHUFFLE)		122	4-978-136-01	INDICATOR (ENTER)	
103	4-978-155-01	PLATE, ORNAMENTAL		123	4-978-123-01	BUTTON (FU)	
104	4-948-236-01	CUSHION (107)		124	4-978-681-01	INDICATOR (SE5)	
105	4-978-134-11	DISPLAY (TA)		125	4-978-122-01	BUTTON (DBFB)	
106	4-978-131-01	DISPLAY (ST) (E, AUS, PX, EE, MX, AR)		126	4-978-120-01	BUTTON (TUNING) (E, AUS, PX, MX, AR)	
106	4-978-131-11	DISPLAY (ST) (AEP, UK, G, IT)		126	4-978-120-11	BUTTON (TUNING) (AEP, UK, G, IT, EE)	
107	4-978-146-01	BUTTON (EJECT-L)		127	4-978-161-01	INDICATOR (PAUSE)	
108	4-978-115-11	PANEL, FRONT (AEP, UK, G, IT, EE)		128	4-978-144-01	BUTTON (DUBBING) (AEP, UK, G, IT, EE)	
108	4-978-115-21	PANEL, FRONT (E, AUS, PX, MX, AR)		128	4-978-144-11	BUTTON (DUBBING) (E, AUS, PX, MX, AR)	
109	4-978-157-01	INDICATOR (TC)		129	4-978-147-01	BUTTON (EJECT-R)	
110	4-978-145-01	BUTTON (TC)		130	4-951-620-01	SCREW (2. 6X8), +BVTP	
111	4-978-159-01	INDICATOR (REV)		131	4-980-061-01	SPRING (OPEN)	(AEP, UK, E, AUS, PX, G, IT, EE, MX)
112	4-978-158-01	INDICATOR (FWD)		132	4-978-130-01	BUTTON (OPEN)	
113	4-978-127-11	BUTTON (DISC 5)		133	4-978-128-01	BUTTON (PLAY)	
114	4-978-160-01	INDICATOR (CLIP)		134	4-978-137-01	INDICATOR (PLAY)	
115	4-978-118-01	BUTTON (POWER)		135	4-978-152-01	BUTTON (AUTO)	
116	4-978-151-01	BUTTON (PON) (E, AUS, PX, MX, AR)		136	4-979-017-01	INDICATOR (SW)	
117	4-978-119-01	BUTTON (CURSOR)		137	4-978-166-01	BUTTON (SUPER-W)	
118	4-978-683-01	SPRING, COMPRESSION		138	4-921-918-11	PLATE, ORNAMENTAL	
119	4-978-682-01	COVER (CURSOR)					
120	4-978-135-01	INDICATOR (BAND)					

## 6-4. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 151	1-659-218-11	TRANS BOARD		158	1-773-154-11	WIRE(FLAT TYPE) (21 CORE) (E, AUS, PX, MX, AR)	
* 152	A-4389-210-A	POWER AMP BOARD, COMPLETE	(AEP, UK, G, IT, EE)	* 159	A-4378-954-A	MAIN BOARD, COMPLETE (AEP, UK, G, IT)	
* 152	A-4389-212-A	POWER AMP BOARD, COMPLETE	(E, AUS, PX, MX, AR)	* 159	A-4378-962-A	MAIN BOARD, COMPLETE (E, AUS, PX, MX, AR)	
153	3-703-244-00	BUSHING (FBS001), CORD	(AEP, UK, AUS, G, IT, EE, AR)	* 159	A-4390-172-A	MAIN BOARD, COMPLETE (EE)	
153	4-966-266-01	BUSHING (S) (FBS002), CORD	(E, PX, MX)	△ 160	1-569-007-11	ADAPTER, CONVERSION 2P (PX)	
154	1-769-977-11	WIRE(FLAT TYPE) (13 CORE) (E, AUS, PX, MX, AR)		△ CNP16011-558-943-41	CORD, POWER (E, PX, MX)		
154	1-773-009-11	WIRE(FLAT TYPE) (15 CORE) (AEP, UK, G, IT, EE)		△ CNP16011-575-651-21	CORD, POWER (AEP, G, IT, EE, AR)		
155	1-765-325-11	WIRE(FLAT TYPE) (11 CORE)		△ CNP16011-696-845-11	CORD, POWER (AUS)		
156	1-776-265-11	WIRE(FLAT TYPE) (19 CORE)		△ CNP16011-751-529-11	CORD, POWER (UK)		
157	1-765-338-11	WIRE(FLAT TYPE) (21 CORE)		△ F1603	1-532-350-00	FUSE (T4A, 250V) (E, PX, MX, AR)	
158	1-773-119-11	WIRE(FLAT TYPE) (19 CORE) (AEP, UK, G, IT, EE)		△ F1604	1-532-259-00	FUSE (T1. 6A, 250V)	(AEP, UK, E, AUS, PX, G, IT, EE, AR)
				△ T1001	1-429-343-11	TRANSFORMER, POWER (AEP, UK, G, IT, EE)	
				△ T1001	1-429-345-11	TRANSFORMER, POWER (E, AUS, PX, MX, AR)	

**6-5. TC MECHANISM SECTION 1  
(TCM-220 WR2E)**

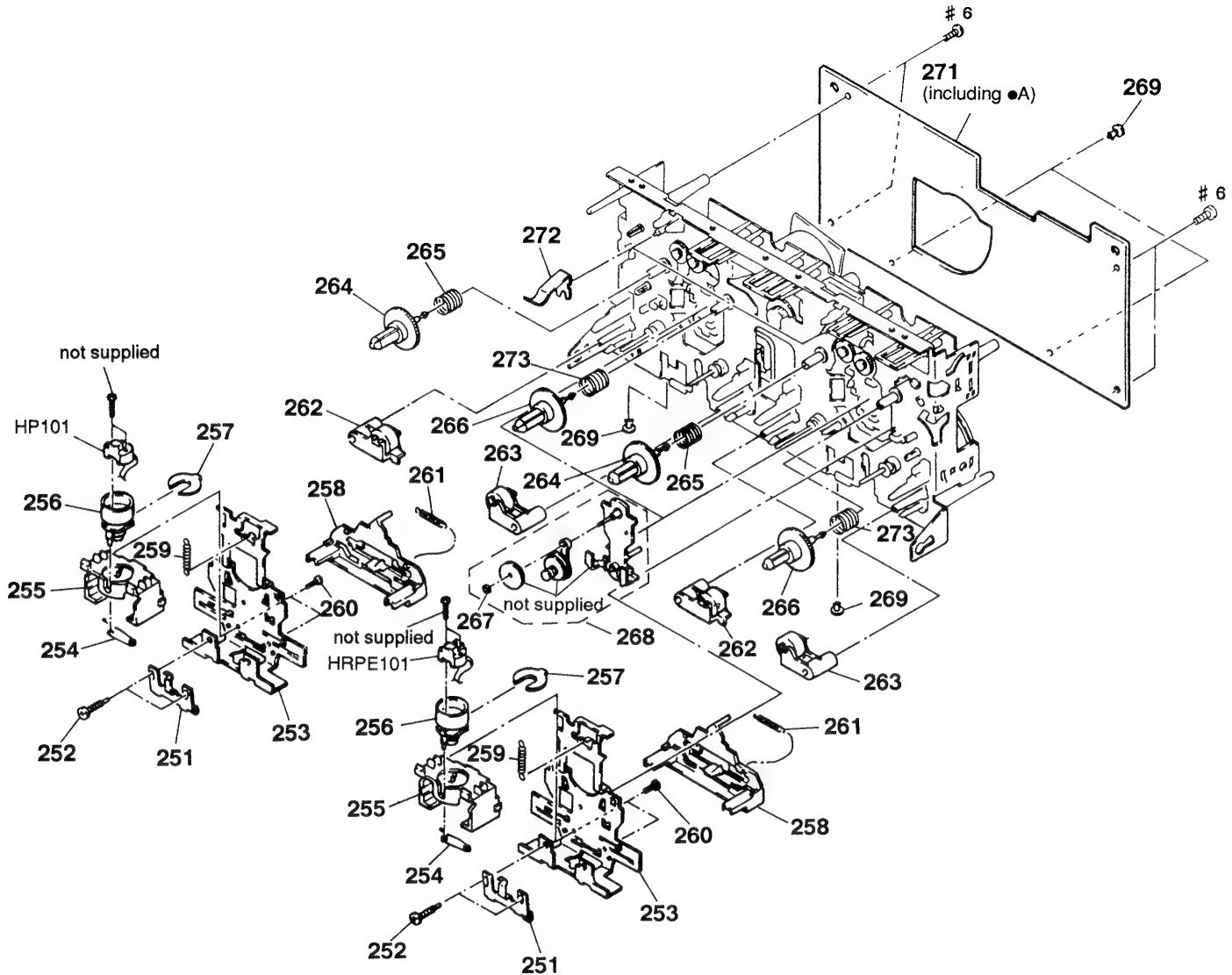


Ref.No.	Part No.	Description
201	X-4943-776-1	HOLDER (L) ASSY, CASSETTE
202	X-4943-775-1	HOLDER (R) ASSY, CASSETTE
203	4-959-231-11	SPRING (L), TORSION
204	4-959-232-11	SPRING (R), TORSION
205	3-354-963-01	DAMPER

Remark	Ref.No.	Part No.	Description	Remark
	*	206	3-908-611-01	FULCRUM, HOLDER
	*	207	3-354-957-01	JOINT (LOCK LEVER)
	*	208	3-354-953-01	LEVER (LOCK LEVER L)
	*	209	3-354-954-01	LEVER (LOCK LEVER R)



6-6. TC MECHANISM SECTION 2  
(TCM-220 WR2E)

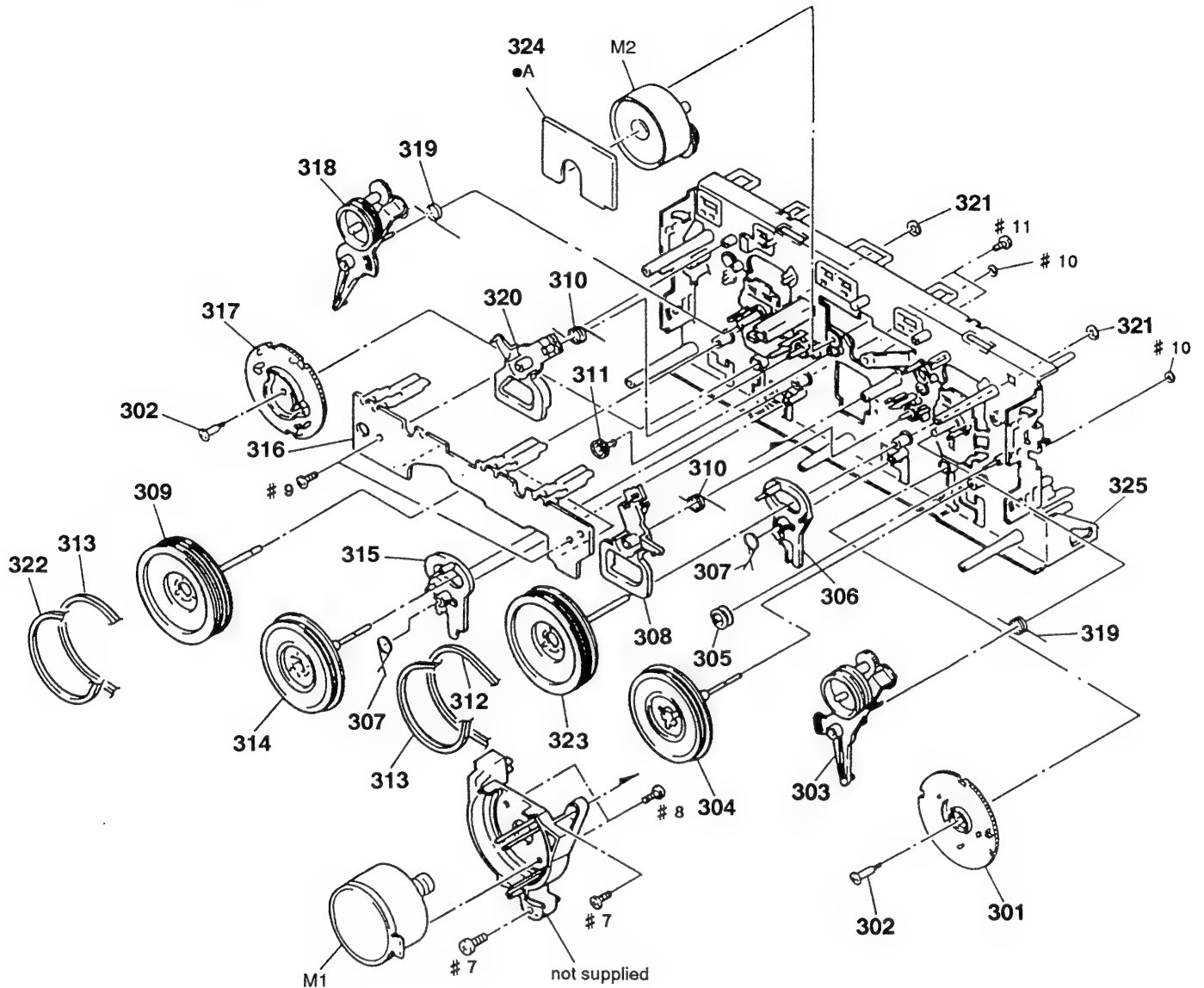


Ref.No.	Part No.	Description
251	3-908-560-01	SPRING, AZIMUTH ADJUSTMENT
252	3-919-684-01	SCREW, AZIMUTH ADJUSTMENT
* 253	X-3367-584-2	SLIDER (HEAD) ASSY
254	3-908-556-01	SPRING, HEAD TOGGLE
255	3-908-558-02	FITTING BLOCK, HEAD
256	3-908-557-02	ROTARY BLOCK, HEAD
* 257	3-908-559-01	STOPPER, AZIMUTH
258	3-908-555-01	SLIDER (REV SLIDER)
259	3-917-143-11	SPRING, TENSION
260	3-388-848-01	SCREW (P2X6) (B TIGHT)
261	3-911-113-01	SPRING, TENSION
262	X-3370-643-1	PINCH LEVER (REV) ASSY

Ref.No.	Part No.	Description
263	X-3367-588-1	PINCH LEVER (FWD) ASSY
264	3-908-613-01	GEAR (S), REEL
265	3-917-141-01	SPRING, COMPRESSION
266	X-3371-305-1	REEL (T) ASSY
267	3-669-465-01	WASHER (1.5), STOPPER
268	X-3370-173-1	TU ASSY
269	3-911-116-21	RIVET, PUSH
* 271	A-2007-435-A	MD BOARD, COMPLETE
272	3-930-972-01	DETENT, HALF
273	3-917-142-01	SPRING, COMPRESSION
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK)
HRPE101	1-500-094-11	HEAD, MAGNETIC (REC/PB/ERASE)

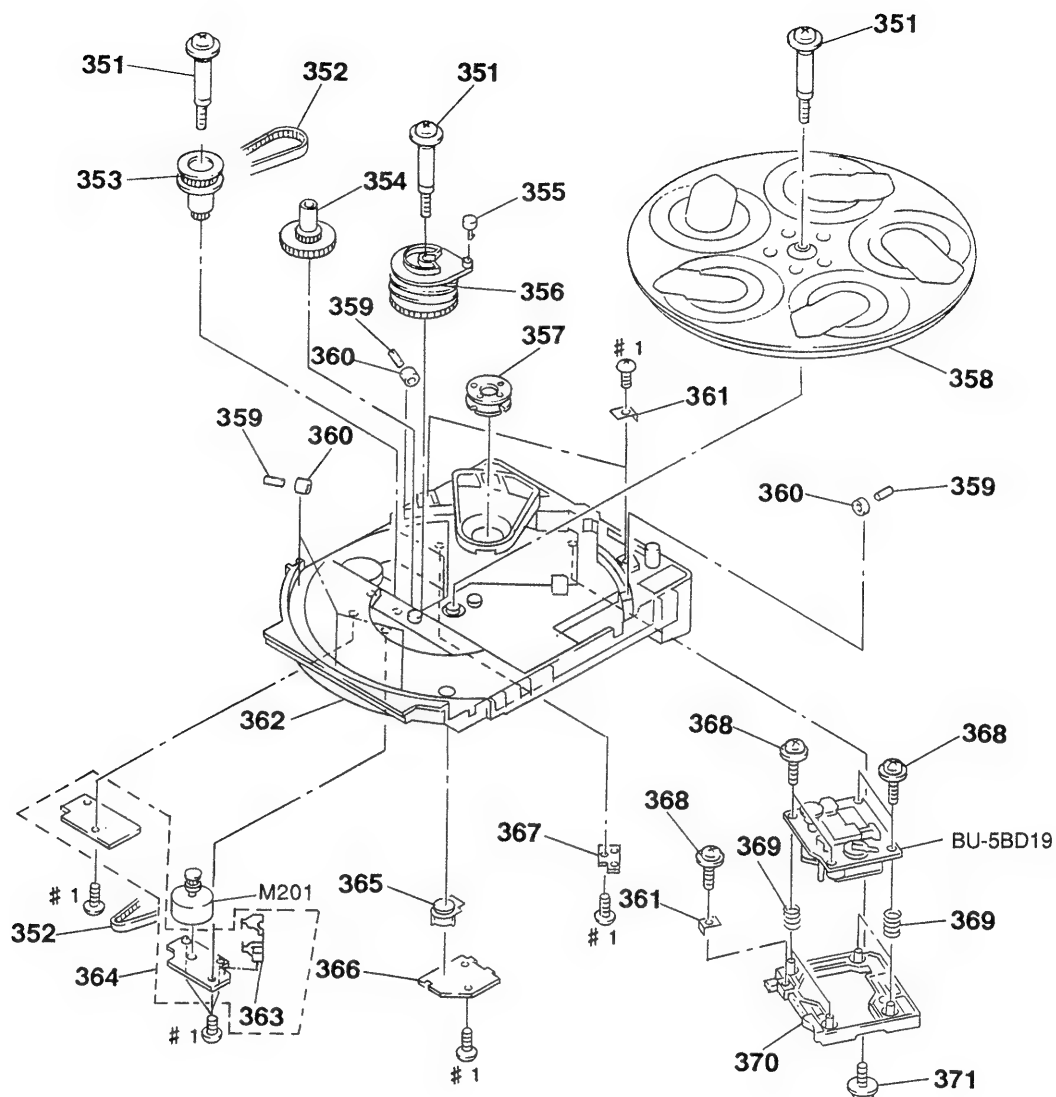
# 6-7. TC MECHANISM SECTION 3 (TCM-220 WR2E)

● A: MOTOR board (Supplied with MD board)



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
301	3-908-597-01	CAM (A)		315	3-908-600-01	LEVER (REV-B)	
302	3-908-608-11	SCREW, STEP		* 316	1-650-669-11	LEAF SWITCH BOARD	
303	X-3367-590-2	ARM (A) ASSY, FR		317	3-908-598-01	CAM (B)	
304	X-3370-169-1	FLYWHEEL (AR) ASSY		318	X-3369-849-2	ARM (B) ASSY, FR	
305	3-928-047-01	PULLEY, TENSION		319	3-914-111-01	SPRING (FR), TORSION	
306	3-908-599-01	LEVER (REV-A)		320	3-908-604-01	LEVER (TRIGGER B)	
307	3-908-601-01	SPRING (REV LEVER), TORSION		321	3-911-115-01	WASHER, STOPPER	
308	3-908-603-01	LEVER (TRIGGER A)		322	3-917-176-11	BELT (B)	
309	X-3370-170-1	FLYWHEEL (BF) ASSY		323	X-3370-172-1	FLYWHEEL (AF) ASSY	
310	3-908-605-01	SPRING (TRIGGER), TORSION		324	A-2007-435-A	MD BOARD, COMPLETE	
311	3-908-609-01	GEAR, TRIGGER		325	X-3371-441-1	CHASSIS ASSY, MECHANICAL	
312	3-913-845-11	BELT (A)					
313	3-913-846-11	BELT (FR)		M1	X-3371-223-1	MOTOR ASSY (CAPSTAN)	
314	X-3370-171-1	FLYWHEEL (BR) ASSY		M2	A-2004-410-A	MOTOR ASSY (TRIGGER)	

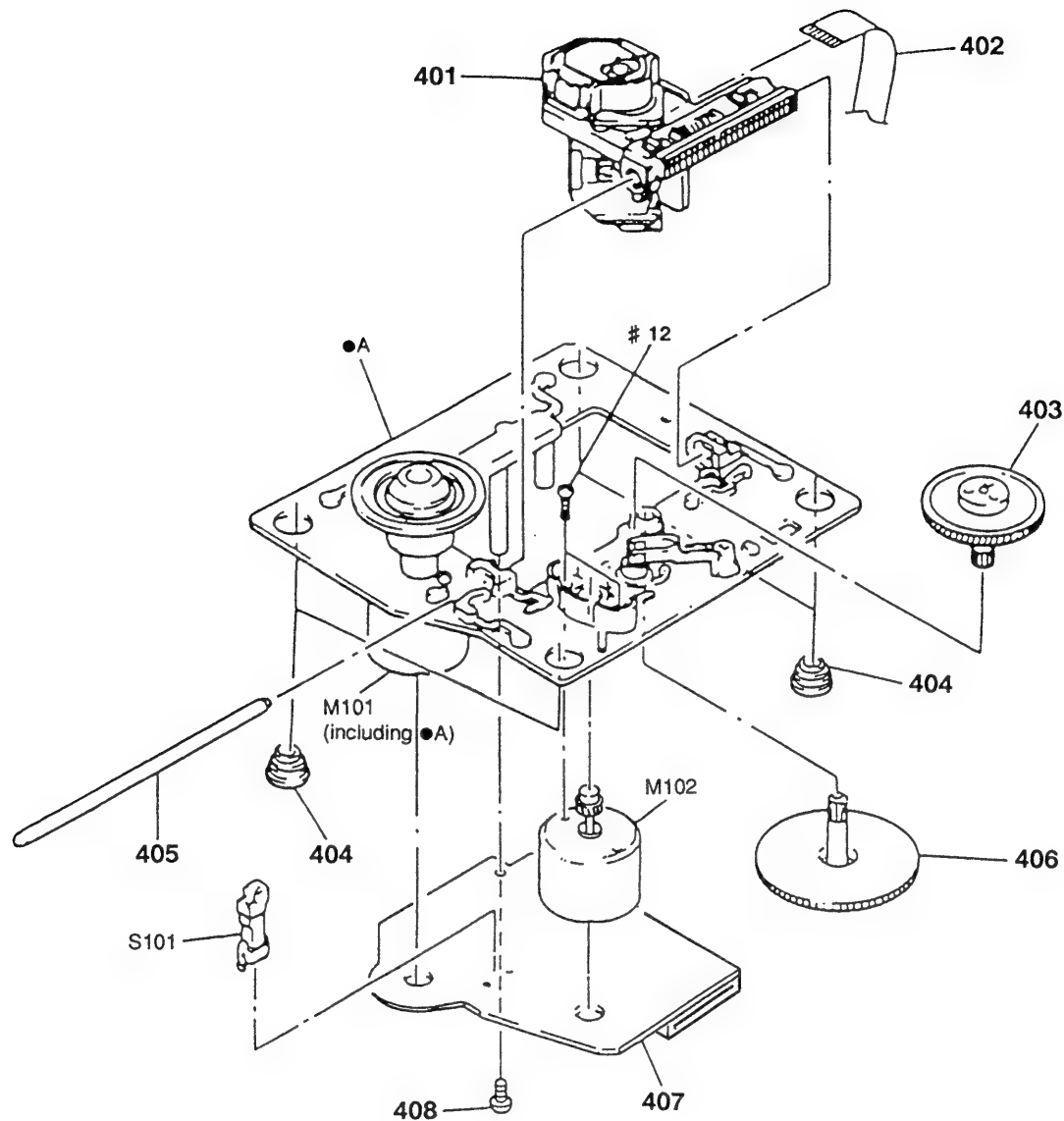
## 6-8. CD MECHANISM SECTION (CDM37-5BD19)



Ref.No.	Part No.	Description
351	4-978-423-01	SCREW, STEP
352	4-944-490-01	BELT (TIMING)
353	A-4660-978-A	GEAR (PULLEY) ASSY
354	4-978-421-01	GEAR (MID)
355	4-978-425-01	ROLLER (CAM)
356	4-978-420-01	CAM (HOLDER)
* 357	1-452-538-11	MAGNET
358	4-978-417-01	TABLE, DISC
359	4-934-376-01	SHAFT (ROLLER)
360	X-4924-457-1	ROLLER ASSY
* 361	4-978-583-01	BRACKET (BU)

Ref.No.	Part No.	Description
* 362	4-978-418-01	CHASSIS
* 363	4-980-385-01	HOLDER (SW)
* 364	A-4673-765-A	CD MOTOR BOARD, COMPLETE
365	4-978-426-01	INDICATOR (NO.)
* 366	1-659-059-12	LED BOARD
* 367	1-659-058-12	TABLE SENSOR BOARD
368	4-933-134-01	SCREW (+PTPWH M2.6X6)
369	4-958-593-01	SPRING (BU), COMPRESSION
* 370	4-978-419-01	HOLDER (BU-5)
371	4-917-583-71	BRACKET, YOKE
M201	A-4660-977-A	MOTOR ASSY (TABLE)

## 6-9. BASE UNIT SECTION (BU-5BD19)



The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

Ref. No.	Part No.	Description
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$\triangle$ 401	8-848-387-01	OPTICAL PICK-UP KSS-213BA/S-N
402	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)
403	4-917-567-01	GEAR (M)
404	4-951-940-01	INSULATOR (BU)
405	4-917-565-01	SHAFT, SLED
406	4-917-564-01	GEAR (P), FLATNESS

Remark	Ref. No.	Part No.	Description
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Ref. No.	Part No.	Description
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* 407	A-4673-402-A	BD BOARD, COMPLETE
408	4-951-620-01	SCREW (2.6X8), +BVTP
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)
M102	X-4917-504-1	MOTOR ASSY (SLED)
S101	1-572-085-11	SWITCH, LEAF (LIMIT)

Remark
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## SECTION 7

### ELECTRICAL PARTS LIST

## NOTE:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable

- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...:  $\mu$ PA..., uPB...:  $\mu$ PB...,  
uPC...:  $\mu$ PC..., uPD...:  $\mu$ PD...
- CAPACITORS  
uF :  $\mu$ F
- COILS  
uH :  $\mu$ H
- Abbreviation  
G : German model  
IT : Italian model  
EE : East European model  
MX : Mexican model  
AUS : Australian model  
AR : Argentine model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4673-402-A	BD BOARD, COMPLETE *****		C141	1-163-038-91	CERAMIC CHIP 0.1uF	25V
		< CAPACITOR >		C142	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C101	1-126-607-11	ELECT CHIP 47uF 20%	4V	C145	1-135-201-11	TANTALUM CHIP 10uF 20%	4V
C102	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V	C146	1-135-201-11	TANTALUM CHIP 10uF 20%	4V
C103	1-164-346-11	CERAMIC CHIP 1uF	16V	C147	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V
C105	1-163-038-91	CERAMIC CHIP 0.1uF	25V	C148	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V
C106	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V	C149	1-164-346-11	CERAMIC CHIP 1uF	16V
C107	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V	C153	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C108	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C154	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C109	1-164-232-11	CERAMIC CHIP 0.01uF	50V			< CONNECTOR >	
C110	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V	CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P	
C111	1-163-038-91	CERAMIC CHIP 0.1uF	25V	CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P	
C112	1-163-038-91	CERAMIC CHIP 0.1uF	25V			< IC >	
C113	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V	IC101	8-752-069-56	IC CXA1782BQ	
C114	1-164-005-11	CERAMIC CHIP 0.47uF	25V	IC102	8-759-291-06	IC BA6397FP	
C115	1-126-607-11	ELECT CHIP 47uF 20%	4V	IC103	8-752-372-94	IC CXD2507AQ	
C116	1-163-016-00	CERAMIC CHIP 0.0039uF 10%	50V	IC104	8-759-185-29	IC PCM1710U-B	
C117	1-164-005-11	CERAMIC CHIP 0.47uF	25V			< MOTOR >	
C118	1-107-823-11	CERAMIC CHIP 0.47uF 10%	16V	M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
C119	1-163-038-91	CERAMIC CHIP 0.1uF	25V	M102	X-4917-504-1	MOTOR ASSY (SLED)	
C120	1-135-201-11	TANTALUM CHIP 10uF 20%	4V			< TRANSISTOR >	
C121	1-163-038-91	CERAMIC CHIP 0.1uF	25V	Q101	8-729-010-08	TRANSISTOR MSB710-R	
C122	1-164-232-11	CERAMIC CHIP 0.01uF	50V	Q102	8-729-424-08	TRANSISTOR UN2111	
C123	1-163-038-91	CERAMIC CHIP 0.1uF	25V	Q103	8-729-421-22	TRANSISTOR UN2211	
C124	1-126-607-11	ELECT CHIP 47uF 20%	4V			< RESISTOR >	
C125	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R102	1-216-001-00	METAL CHIP 10 5% 1/10W	
C126	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R103	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
C127	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V	R104	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
C128	1-163-135-00	CERAMIC CHIP 560PF 5%	50V	R105	1-216-093-00	METAL CHIP 68K 5% 1/10W	
C129	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R106	1-216-093-00	METAL CHIP 68K 5% 1/10W	
C130	1-164-336-11	CERAMIC CHIP 0.33uF	25V	R107	1-216-093-00	METAL CHIP 68K 5% 1/10W	
C131	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R108	1-216-093-00	METAL CHIP 68K 5% 1/10W	
C132	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V	R109	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
C133	1-163-145-00	CERAMIC CHIP 0.0015uF 5%	50V	R112	1-216-083-00	METAL CHIP 27K 5% 1/10W	
C134	1-164-346-11	CERAMIC CHIP 1uF	16V	R113	1-216-083-00	METAL CHIP 27K 5% 1/10W	
C135	1-163-251-11	CERAMIC CHIP 100PF 5%	50V	R114	1-216-101-00	METAL CHIP 150K 5% 1/10W	
C136	1-164-005-11	CERAMIC CHIP 0.47uF	25V				
C137	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C139	1-163-235-11	CERAMIC CHIP 22PF 5%	50V				
C140	1-163-235-11	CERAMIC CHIP 22PF 5%	50V				

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R115	1-216-101-00	METAL CHIP	150K	5%	1/10W			< SWITCH >			
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W						
R117	1-216-069-00	METAL CHIP	6.8K	5%	1/10W						
R118	1-216-049-91	METAL GLAZE	1K	5%	1/10W	S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
								< VIBRATOR >			
R119	1-216-089-91	METAL GLAZE	47K	5%	1/10W	X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			
R120	1-216-089-91	METAL GLAZE	47K	5%	1/10W						
R121	1-216-114-00	METAL GLAZE	510K	5%	1/10W						
R122	1-216-097-91	METAL GLAZE	100K	5%	1/10W						
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W						
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W	*	1-659-404-11	CD (L) BOARD			
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W						
R126	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W						
R127	1-216-089-91	METAL GLAZE	47K	5%	1/10W			< CONNECTOR >			
R128	1-216-105-91	METAL GLAZE	220K	5%	1/10W	* CN515	1-568-944-11	PIN, CONNECTOR 6P			
								< DIODE >			
R129	1-216-049-91	METAL GLAZE	1K	5%	1/10W	D638	8-719-057-09	DIODE LNJ801LPDJA (CLIP C)			
R130	1-216-079-00	METAL CHIP	18K	5%	1/10W	D639	8-719-057-09	DIODE LNJ801LPDJA (CLIP B)			
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W	D640	8-719-057-09	DIODE LNJ801LPDJA (CLIP A)			
R132	1-216-061-00	METAL CHIP	3.3K	5%	1/10W						
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W			< RESISTOR >			
						R568	1-247-815-91	CARBON 220 5% 1/4W			
R134	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R569	1-249-411-11	CARBON 330 5% 1/4W			
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R570	1-249-413-11	CARBON 470 5% 1/4W F			
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W	R571	1-249-415-11	CARBON 680 5% 1/4W F			
R137	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R572	1-249-417-11	CARBON 1K 5% 1/4W F			
R138	1-216-049-91	METAL GLAZE	1K	5%	1/10W						
						R573	1-249-419-11	CARBON 1.5K 5% 1/4W F			
R139	1-216-033-00	METAL CHIP	220	5%	1/10W	R574	1-249-421-11	CARBON 2.2K 5% 1/4W F			
R140	1-216-081-00	METAL CHIP	22K	5%	1/10W	R575	1-249-423-11	CARBON 3.3K 5% 1/4W F			
R141	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	R576	1-249-427-11	CARBON 6.8K 5% 1/4W F			
R142	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	R577	1-249-431-11	CARBON 15K 5% 1/4W			
R143	1-216-121-91	METAL GLAZE	1M	5%	1/10W						
						R682	1-249-407-11	CARBON 150 5% 1/4W			
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W	R683	1-249-407-11	CARBON 150 5% 1/4W			
R145	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R684	1-249-407-11	CARBON 150 5% 1/4W			
R146	1-216-097-91	METAL GLAZE	100K	5%	1/10W			< SWITCH >			
R147	1-216-049-91	METAL GLAZE	1K	5%	1/10W	S569	1-554-303-21	SWITCH, TACTILE (CLIP C)			
R148	1-216-049-91	METAL GLAZE	1K	5%	1/10W	S570	1-554-303-21	SWITCH, TACTILE (CLIP B)			
						S571	1-554-303-21	SWITCH, TACTILE (CLIP A)			
R149	1-216-049-91	METAL GLAZE	1K	5%	1/10W	S572	1-554-303-21	SWITCH, TACTILE (ERASE MUSIC CLIP)			
R150	1-216-037-00	METAL CHIP	330	5%	1/10W	S573	1-554-303-21	SWITCH, TACTILE (PLAY MUSIC CLIP)			
R151	1-216-037-00	METAL CHIP	330	5%	1/10W						
R152	1-216-037-00	METAL CHIP	330	5%	1/10W	S574	1-554-303-21	SWITCH, TACTILE (DISC 1 DISC SELECT)			
R153	1-216-082-00	METAL GLAZE	24K	5%	1/10W	S575	1-554-303-21	SWITCH, TACTILE (DISC 2 DISC SELECT)			
						S576	1-554-303-21	SWITCH, TACTILE (DISC 3 DISC SELECT)			
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	S577	1-554-303-21	SWITCH, TACTILE (DISC 4 DISC SELECT)			
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W	S578	1-554-303-21	SWITCH, TACTILE (DISC 5 DISC SELECT)			
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W						
R158	1-216-001-00	METAL CHIP	10	5%	1/10W						
		< VARIABLE RESISTOR >									
RV101	1-241-396-11	RES, ADJ, METAL GLAZE	22K								
RV102	1-241-396-11	RES, ADJ, METAL GLAZE	22K								
RV103	1-241-396-11	RES, ADJ, METAL GLAZE	22K								

## CD (R)

## CD JOG

## CD LED

## CD MOTOR

Ref.No.	Part No.	Description	Remark
*	1-659-409-11	CD (R) BOARD *****	
		< CONNECTOR >	
CN514	1-568-936-11	PIN, CONNECTOR 9P	
		< DIODE >	
D603	8-719-058-03	DIODE SEL5423E-TP15 (▷)	
D604	8-719-058-03	DIODE SEL5423E-TP15 (▷)	
D636	8-719-058-17	DIODE LNJ401NPYJA (■)	
D637	8-719-057-09	DIODE LNJ801LPDJA (AUTO PLAY)	
		< RESISTOR >	
R553	1-249-411-11	CARBON 330 5% 1/4W	
R554	1-249-413-11	CARBON 470 5% 1/4W F	
R555	1-249-415-11	CARBON 680 5% 1/4W F	
R556	1-249-417-11	CARBON 1K 5% 1/4W F	
R557	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R675	1-247-807-31	CARBON 100 5% 1/4W	
R676	1-249-407-11	CARBON 150 5% 1/4W	
R678	1-247-815-91	CARBON 220 5% 1/4W	
R680	1-247-815-91	CARBON 220 5% 1/4W	
		< SWITCH >	
S554	1-554-303-21	SWITCH, TACTILE (▷)	
S555	1-554-303-21	SWITCH, TACTILE (■)	
S556	1-554-303-21	SWITCH, TACTILE (■)	
S557	1-554-303-21	SWITCH, TACTILE (DISC SKIP)	
S558	1-554-303-21	SWITCH, TACTILE (AUTO PLAY)	
*****			
*	1-659-405-11	CD JOG BOARD *****	
		< CAPACITOR >	
C515	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C516	1-162-306-11	CERAMIC 0.01uF 30% 16V	
		< CONNECTOR >	
* CN518	1-568-942-11	PIN, CONNECTOR 4P	
		< RESISTOR >	
R558	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R559	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R560	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R561	1-249-431-11	CARBON 15K 5% 1/4W	
		< SWITCH >	
S502	1-473-534-11	ENCODER, ROTARY (◁▷ AMS ▷▷)	
S559	1-554-303-21	SWITCH, TACTILE (PROGRAM)	

Ref.No.	Part No.	Description	Remark
S560	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S561	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S562	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
*****			
*	1-659-406-11	CD LED BOARD *****	
		< CONNECTOR >	
CN516	1-506-481-11	PIN, CONNECTOR 2P	
		< DIODE >	
D3151	8-719-057-40	DIODE HLMF-K305-2UL (5CD)	
D3152	8-719-058-19	DIODE HLMF-K405-2UL (5CD)	
D3153	8-719-058-19	DIODE HLMF-K405-2UL (5CD)	
D3154	8-719-057-40	DIODE HLMF-K305-2UL (5CD)	
		< RESISTOR >	
R3151	1-249-412-11	CARBON 390 5% 1/4W F	
*****			
*	A-4673-765-A	CD MOTOR BOARD, COMPLETE *****	
*	4-980-385-01	HOLDER (SW)	
		< CAPACITOR >	
C201	1-124-907-11	ELECT 10uF 20% 50V	
C202	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C203	1-124-907-11	ELECT 10uF 20% 50V	
		< CONNECTOR >	
* CN201	1-568-947-11	PIN, CONNECTOR 9P	
		< IC >	
IC201	8-759-365-94	IC TA8409S	
		< COIL >	
L201	1-408-117-00	INDUCTOR 10uH	
		< MOTOR >	
M201	A-4660-977-A	MOTOR ASSY (TABLE)	
		< RESISTOR >	
R205	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R206	1-249-425-11	CARBON 4.7K 5% 1/4W F	

## CD MOTOR

## DOOR SW

## HP

## LEAF SWITCH

## LED

## MAIN

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
< SWITCH >				< SWITCH >			
S201	1-762-587-11	SWITCH, PUSH (1 KEY) (UP)		S1001	1-692-832-11	SWITCH, PUSH (1 KEY) (A PLAY)	
*****				S1002	1-692-832-11	SWITCH, PUSH (1 KEY) (B PLAY)	
*	1-659-408-11	DOOR SW BOARD		S1003	1-572-248-11	SWITCH, LEAF (A HALF)	
		*****		S1004	1-571-281-21	SWITCH, LEAF (A CrO2)	
< CAPACITOR >				S1005	1-571-281-21	SWITCH, LEAF (REC A)	
C591	1-164-159-11	CERAMIC 0.1uF	50V	S1006	1-572-248-11	SWITCH, LEAF (B HALF)	
< CONNECTOR >				S1008	1-571-281-21	SWITCH, LEAF (B CrO2)	
* CN519	1-568-940-11	PIN, CONNECTOR 2P		S1009	1-571-281-21	SWITCH, LEAF (REC B)	
< SWITCH >				*****			
S591	1-572-126-11	SWITCH, PUSH (1 KEY) (▲ OPEN)		* 1-659-059-12	LED BOARD	*****	
*****				< DIODE >			
*	1-659-411-11	HP BOARD		D201	8-719-032-98	DIODE SEL5820A (DISC No.)	
		*****		< TRANSISTOR >			
< CAPACITOR >				Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
C621	1-164-159-21	CERAMIC 0.1uF	50V	< RESISTOR >			
C622	1-164-159-21	CERAMIC 0.1uF	(AEP, UK, G, IT, EE) 50V	R201	1-247-863-91	CARBON 22K 5% 1/4W	
C623	1-164-159-21	CERAMIC 0.1uF	(AEP, UK, G, IT, EE) 50V	R202	1-249-411-11	CARBON 330 5% 1/4W	
< JACK >				R203	1-249-437-11	CARBON 47K 5% 1/4W	
J601	1-569-113-11	JACK, LARGE TYPE (PHONES)		*****			
*****				* A-4378-954-A	MAIN BOARD, COMPLETE (AEP, UK, G, IT)	*****	
*	1-650-669-11	LEAF SWITCH BOARD		* A-4378-962-A	MAIN BOARD, COMPLETE (E, AUS, PX, MX, AR)	*****	
		*****		* A-4390-172-A	MAIN BOARD, COMPLETE (EE)	*****	
< CONNECTOR >				7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		
* CN1001	1-568-854-11	SOCKET, CONNECTOR 11P		< CAPACITOR >			
< TRANSISTOR >				C201	1-124-925-11	ELECT 2.2uF 20% 100V	
Q1001	8-749-010-90	TRANSISTOR PHOTO REFLECTOR NJL5165KA-H2		C202	1-162-600-11	CERAMIC 0.0047uF 20% 16V	
Q1002	8-749-010-90	TRANSISTOR PHOTO REFLECTOR NJL5165KA-H2		C203	1-126-925-11	ELECT 470uF 20% 10V	
< RESISTOR >				C211	1-124-925-11	ELECT 2.2uF 20% 100V	
R1001	1-249-412-11	CARBON 390 5% 1/4W F		C212	1-162-600-11	CERAMIC 0.0047uF 20% 16V	
R1002	1-249-412-11	CARBON 390 5% 1/4W F		C250	1-162-306-11	CERAMIC 0.01uF 20% 16V	
R1003	1-249-414-11	CARBON 560 5% 1/4W F				(AEP, UK, G, IT)	
R1004	1-247-834-11	CARBON 1.3K 5% 1/4W		C251	1-164-035-11	CERAMIC 47PF 5% 50V	
R1005	1-247-818-11	CARBON 300 5% 1/4W				(AEP, UK, G, IT)	
				C252	1-102-527-11	CERAMIC 82PF 5% 50V	
						(AEP, UK, G, IT)	
				C253	1-162-291-31	CERAMIC 560PF 10% 50V	
						(AEP, UK, G, IT)	



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C254	1-162-306-11	CERAMIC	0.01uF 20% 16V (AEP, UK, G, IT)	C711	1-126-177-11	ELECT	100uF 20% 10V
C255	1-162-288-31	CERAMIC	330PF 10% 50V (AEP, UK, G, IT)	C712	1-126-177-11	ELECT	100uF 20% 10V
C256	1-124-925-11	ELECT	2.2uF 20% 100V (AEP, UK, G, IT)	C713	1-162-306-11	CERAMIC	0.01uF 30% 16V
C257	1-126-964-11	ELECT	10uF 20% 50V (AEP, UK, G, IT)	C801	1-162-288-31	CERAMIC	330PF 10% 50V (AEP, UK, G, IT, EE)
C258	1-162-291-31	CERAMIC	560PF 10% 50V (AEP, UK, G, IT)	C803	1-162-282-31	CERAMIC	100PF 10% 50V
C259	1-126-964-11	ELECT	10uF 20% 50V (AEP, UK, G, IT)	C804	1-162-282-31	CERAMIC	100PF 10% 50V
C260	1-164-159-21	CERAMIC	0.1uF 50V (AEP, UK, G, IT)	C805	1-124-252-00	ELECT	0.33uF 20% 50V (E, AUS, PX, MX, AR)
C261	1-126-967-11	ELECT	47uF 20% 16V (AEP, UK, G, IT)	C805	1-124-925-11	ELECT	2.2uF 20% 100V
C301	1-130-479-00	MYLAR	0.0047uF 5% 50V	C806	1-130-479-00	MYLAR	0.0047uF 5% 50V
C302	1-162-290-31	CERAMIC	470PF 10% 50V	C807	1-130-473-00	MYLAR	0.0015uF 5% 50V
C303	1-164-159-21	CERAMIC	0.1uF 5% 50V (AEP, UK, G, IT, EE)	C808	1-124-463-00	ELECT	0.1uF 20% 50V
C305	1-124-903-11	ELECT	1uF 20% 50V	C809	1-124-589-11	ELECT	47uF 20% 16V (AEP, UK, G, IT, EE)
C306	1-124-902-00	ELECT	0.47uF 20% 50V	C810	1-162-306-11	CERAMIC	0.01uF 30% 16V
C307	1-126-964-11	ELECT	10uF 20% 50V	C811	1-162-306-11	CERAMIC	0.01uF 30% 16V
C308	1-126-964-11	ELECT	10uF 20% 50V	C821	1-162-286-21	CERAMIC	220PF 10% 50V (AEP, UK, G, IT, EE)
C309	1-124-903-11	ELECT	1uF 20% 50V	C825	1-109-889-11	ELECT	1uF 20% 50V
C310	1-126-933-11	ELECT	100uF 20% 10V	C832	1-130-473-00	MYLAR	0.0015uF 5% 50V
C351	1-130-479-00	MYLAR	0.0047uF 5% 50V	C833	1-124-903-11	ELECT	1uF 20% 50V
C352	1-162-290-31	CERAMIC	470PF 10% 50V	C834	1-130-479-00	MYLAR	0.0047uF 5% 50V
C353	1-164-159-21	CERAMIC	0.1uF 5% 50V (AEP, UK, G, IT, EE)	C835	1-124-903-11	ELECT	1uF 20% 50V
C355	1-124-903-11	ELECT	1uF 20% 50V	C836	1-136-495-11	FILM	0.068uF 5% 50V
C356	1-124-902-00	ELECT	0.47uF 20% 50V	C837	1-126-947-11	ELECT	47uF 20% 35V
C357	1-126-964-11	ELECT	10uF 20% 50V	C838	1-124-902-00	ELECT	0.47uF 20% 50V
C358	1-126-964-11	ELECT	10uF 20% 50V	C839	1-124-902-00	ELECT	0.47uF 20% 50V
C359	1-124-903-11	ELECT	1uF 20% 50V	C840	1-162-305-11	CERAMIC	0.0068uF 20% 16V
C360	1-126-933-11	ELECT	100uF 20% 10V	C841	1-136-495-11	FILM	0.068uF 5% 50V
C401	1-164-159-21	CERAMIC	0.1uF 50V	C842	1-162-304-21	CERAMIC	0.0047uF 5% 50V
C402	1-164-159-21	CERAMIC	0.1uF 50V	C843	1-130-473-00	MYLAR	0.0015uF 5% 50V
C403	1-164-159-21	CERAMIC	0.1uF 50V	C844	1-124-903-11	ELECT	1uF 20% 50V
C404	1-126-933-11	ELECT	100uF 20% 16V	C845	1-161-494-00	CERAMIC	0.022uF 25V
C405	1-126-935-11	ELECT	470uF 20% 16V (AEP, UK, G, IT, EE)	C846	1-126-933-11	ELECT	100uF 20% 16V
C701	1-162-306-11	CERAMIC	0.01uF 20% 16V	C847	1-162-306-11	CERAMIC	0.01uF 30% 16V
C702	1-126-926-11	ELECT	1000uF 20% 10V	C848	1-162-290-31	CERAMIC	470PF 10% 50V
C703	1-126-964-11	ELECT	10uF 20% 50V	C849	1-162-290-31	CERAMIC	470PF 10% 50V
C704	1-136-165-00	FILM	0.1uF 5% 50V	C851	1-162-288-31	CERAMIC	330PF 10% 50V (AEP, UK, G, IT, EE)
C705	1-136-165-00	FILM	0.1uF 5% 50V	C853	1-162-282-31	CERAMIC	100PF 10% 50V
C706	1-126-965-11	ELECT	22uF 20% 50V	C854	1-162-282-31	CERAMIC	100PF 10% 50V
C707	1-162-206-31	CERAMIC	20PF 5% 50V	C855	1-124-252-00	ELECT	0.33uF 20% 50V (E, AUS, PX, MX, AR)
C708	1-162-206-31	CERAMIC	20PF 5% 50V	C855	1-124-925-11	ELECT	2.2uF 20% 100V
C709	1-126-934-11	ELECT	220uF 20% 16V	C856	1-130-479-00	MYLAR	0.0047uF 5% 50V
C710	1-162-306-11	CERAMIC	0.01uF 30% 16V	C857	1-130-473-00	MYLAR	0.0015uF 5% 50V
				C858	1-124-463-00	ELECT	0.1uF 20% 50V
				C859	1-124-589-11	ELECT	47uF 20% 16V (AEP, UK, G, IT, EE)
				C862	1-126-964-11	ELECT	10uF 20% 50V
				C863	1-162-306-11	CERAMIC	0.01uF 30% 16V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C864	1-126-964-11	ELECT	10uF	20%	50V	C1009	1-162-294-31	CERAMIC	0.001uF	10%	50V
C865	1-162-306-11	CERAMIC	0.01uF	30%	16V	C1010	1-164-159-21	CERAMIC	0.1uF		50V
C871	1-162-286-21	CERAMIC	220PF	10%	50V	C1011	1-164-159-21	CERAMIC	0.1uF		50V
			(AEP, UK, G, IT, EE)			C1012	1-126-964-11	ELECT	10uF	20%	50V
C900	1-126-964-11	ELECT	10uF	20%	50V	C1013	1-126-916-11	ELECT	1000uF	20%	6.3V
C901	1-124-464-11	ELECT	0.22uF	20%	50V						
C902	1-124-464-11	ELECT	0.22uF	20%	50V	C1014	1-126-964-11	ELECT	10uF	20%	50V
C903	1-136-495-11	FILM	0.068uF	5%	50V	C1015	1-126-964-11	ELECT	10uF	20%	50V
C904	1-136-495-11	FILM	0.068uF	5%	50V	C1016	1-126-925-11	ELECT	470uF	20%	10V
C905	1-136-156-00	FILM	0.018uF	5%	50V	C1017	1-126-925-11	ELECT	470uF	20%	10V
C906	1-136-156-00	FILM	0.018uF	5%	50V	C1018	1-126-942-61	ELECT	1000uF	20%	25V
C907	1-130-480-00	MYLAR	0.0056uF	5%	50V	C1020	1-126-947-11	ELECT	47uF	20%	35V
C908	1-130-479-00	MYLAR	0.0047uF	5%	50V	C1021	1-162-306-11	CERAMIC	0.01uF	30%	16V
C909	1-130-474-00	MYLAR	0.0018uF	5%	50V	C1022	1-126-968-11	ELECT	100uF	20%	50V
C910	1-126-964-11	ELECT	10uF	20%	50V	C1023	1-126-969-11	ELECT	220uF	20%	50V
C911	1-126-964-11	ELECT	10uF	20%	50V	C1024	1-126-964-11	ELECT	10uF	20%	50V
C912	1-136-169-00	FILM	0.22uF	5%	50V	C1025	1-126-964-11	ELECT	10uF	20%	50V
C913	1-136-169-00	FILM	0.22uF	5%	50V	C1026	1-126-964-11	ELECT	10uF	20%	50V
C914	1-126-964-11	ELECT	10uF	20%	50V	C1027	1-126-964-11	ELECT	10uF	20%	50V
C915	1-136-153-00	CERAMIC	0.01uF	5%	50V	C1028	1-126-933-11	ELECT	100uF	20%	16V
C930	1-164-159-21	CERAMIC	0.1uF		50V	C1830	1-136-165-00	FILM	0.1uF	5%	50V
C931	1-162-306-11	CERAMIC	0.01uF	30%	16V	C1831	1-136-165-00	FILM	0.1uF	5%	50V
C933	1-124-902-00	ELECT	0.47uF	20%	50V	C1832	1-136-167-00	FILM	0.15uF	5%	50V
C935	1-164-159-21	CERAMIC	0.1uF		50V	C1833	1-136-171-00	ELECT	0.33uF	5%	50V
C936	1-126-964-11	ELECT	10uF	20%	50V	C1836	1-126-964-11	ELECT	10uF	20%	50V
C938	1-162-282-31	CERAMIC	100PF	10%	50V	C1838	1-126-964-11	ELECT	10uF	20%	50V
C943	1-126-964-11	ELECT	10uF	20%	50V	C1839	1-126-964-11	ELECT	10uF	20%	50V
C944	1-126-964-11	ELECT	10uF	20%	50V	< CONNECTOR >					
C950	1-126-964-11	ELECT	10uF	20%	50V	CN201	1-770-067-11	CONNECTOR, FFC/FPC 19P			
C951	1-124-464-11	ELECT	0.22uF	20%	50V	* CN203	1-568-936-11	PIN, CONNECTOR 9P			
C952	1-124-464-11	ELECT	0.22uF	20%	50V	* CN250	1-568-832-11	SOCKET, CONNECTOR 13P (E, AUS, PX, MX, AR)			
C953	1-136-495-11	FILM	0.068uF	5%	50V	* CN250	1-568-834-11	SOCKET, CONNECTOR 15P (AEP, UK, G, IT, EE)			
C954	1-136-495-11	FILM	0.068uF	5%	50V	CN401	1-568-838-11	SOCKET, CONNECTOR 21P			
C955	1-136-156-00	FILM	0.018uF	5%	50V						
C956	1-136-156-00	FILM	0.018uF	5%	50V	* CN402	1-568-830-11	SOCKET, CONNECTOR 11P			
C957	1-130-480-00	MYLAR	0.0056uF	5%	50V	* CN403	1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P			
C958	1-130-479-00	MYLAR	0.0047uF	5%	50V	CN701	1-568-802-11	SOCKET, CONNECTOR 19P (AEP, UK, G, IT, EE)			
C959	1-130-474-00	MYLAR	0.0018uF	5%	50V	CN701	1-568-838-11	SOCKET, CONNECTOR 21P (E, AUS, PX, MX, AR)			
C960	1-126-964-11	ELECT	10uF	20%	50V	* CN1000	1-770-734-11	CONNECTOR, BOARD TO BOARD 20P			
C961	1-126-964-11	ELECT	10uF	20%	50V	< DIODE >					
C962	1-136-169-00	FILM	0.22uF	5%	50V	D201	8-719-987-63	DIODE 1N4148M			
C963	1-136-169-00	FILM	0.22uF	5%	50V	D202	8-719-987-63	DIODE 1N4148M			
C964	1-126-964-11	ELECT	10uF	20%	50V	D251	8-719-987-63	DIODE 1N4148M (AEP, UK, G, IT)			
C965	1-136-153-00	CERAMIC	0.01uF	5%	50V	D401	8-719-933-54	DIODE HZS9A2L			
C1001	1-126-937-11	ELECT	4700uF	20%	16V	D701	8-719-987-63	DIODE 1N4148M			
C1002	1-126-768-11	ELECT	2200uF	20%	16V						
C1004	1-126-952-11	ELECT	1000uF	20%	16V	D702	8-719-987-63	DIODE 1N4148M			
C1005	1-126-964-11	ELECT	10uF	20%	50V	D703	8-719-987-63	DIODE 1N4148M			
C1006	1-126-952-11	ELECT	1000uF	20%	16V	D704	8-719-987-63	DIODE 1N4148M			
C1007	1-126-934-11	ELECT	220uF	20%	16V	D705	8-719-987-63	DIODE 1N4148M			
C1008	1-126-933-11	ELECT	100uF	20%	16V	D706	8-719-200-82	DIODE 11ES2			

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D707	8-719-987-63	DIODE 1N4148M				< JACK >	
D801	8-719-987-63	DIODE 1N4148M		J801	1-695-188-31	JACK, PIN 4P (PHONO, VIDEO (AUDIO) IN)	
D901	8-719-987-63	DIODE 1N4148M				< RESISTOR >	
D902	8-719-987-63	DIODE 1N4148M					
D1001	8-719-200-82	DIODE 11ES2					
D1003	8-719-200-82	DIODE 11ES2		JP105	1-247-895-91	CARBON 470K 5% 1/4W	(E, AUS, PX, MX, AR)
D1004	8-719-200-82	DIODE 11ES2		JP105	1-249-429-11	CARBON 10K 5% 1/4W	(AEP, UK, G, IT, EE)
D1005	8-719-200-82	DIODE 11ES2				< COIL >	
D1006	8-719-200-82	DIODE 11ES2		L250	1-410-521-11	INDUCTOR 100uH (AEP, UK, G, IT)	
D1007	8-719-987-63	DIODE 1N4148M		L840	1-410-521-11	INDUCTOR 100uH	
D1008	8-719-001-43	DIODE UZL-11M1-TA				< TRANSISTOR >	
D1009	8-719-200-82	DIODE 11ES2		Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1010	8-719-200-82	DIODE 11ES2		Q351	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1011	8-719-010-43	DIODE UZ-5.6BSC		Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1012	8-719-013-63	DIODE UZ-30BS		Q402	8-729-900-65	TRANSISTOR DTA144ES	
D1013	8-719-200-82	DIODE 11ES2		Q403	8-729-801-93	TRANSISTOR 2SD1387	
D1014	8-719-200-82	DIODE 11ES2		Q406	8-729-900-80	TRANSISTOR DTC114ES	
D1015	8-719-987-63	DIODE 1N4148M		Q407	8-729-422-57	TRANSISTOR UN4111	
D1016	8-719-200-82	DIODE 11ES2		Q408	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D1017	8-719-200-82	DIODE 11ES2		Q409	8-729-900-80	TRANSISTOR DTC114ES	
D1018	8-719-200-82	DIODE 11ES2		Q410	8-729-900-65	TRANSISTOR DTA144ES	
D1021	8-719-200-82	DIODE 11ES2		Q411	8-729-900-65	TRANSISTOR DTA144ES	
D1022	8-719-200-82	DIODE 11ES2		Q412	8-729-900-65	TRANSISTOR DTA144ES	
D1023	8-719-210-21	DIODE 11EQS04		Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1830	8-719-987-63	DIODE 1N4148M		Q801	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1831	8-719-987-63	DIODE 1N4148M		Q802	8-729-422-57	TRANSISTOR UN4111	
		< EPT >		Q803	8-729-119-78	TRANSISTOR 2SC2785-HFE	
EPT1002	1-537-770-21	TERMINAL BOARD, GROUND		Q804	8-729-422-57	TRANSISTOR UN4111	
		< IC >		Q805	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC250	8-759-169-99	IC SAA6579 (AEP, UK, G, IT)		Q806	8-729-422-57	TRANSISTOR UN4111	
IC251	8-759-634-51	IC M5218AP (AEP, UK, G, IT)		Q820	8-729-422-57	TRANSISTOR UN4111	
IC401	8-759-289-38	IC HA12195NT (AEP, UK, G, IT, EE)		Q830	8-729-141-26	TRANSISTOR 2SC3622A-LK	
IC401	8-759-289-39	IC HA12196NT (E, AUS, PX, MX, AR)		Q831	8-729-141-26	TRANSISTOR 2SC3622A-LK	
IC402	8-759-822-09	IC LB1641		Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC701	8-759-375-44	IC TMP87CS64YF-6361		Q902	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC702	8-759-165-80	IC PST600C-T		Q951	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC801	8-759-634-51	IC M5218AP		Q952	8-729-141-26	TRANSISTOR 2SC3622A-LK	
IC802	8-759-000-48	IC MC14052BCP		Q953	8-729-141-26	TRANSISTOR 2SC3622A-LK	
IC804	8-759-634-51	IC M5218AP		Q954	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC805	8-759-634-51	IC M5218AP		Q1001	8-729-118-01	TRANSISTOR 2SB1116-K	
IC806	8-759-265-83	IC M65843FP		Q1002	8-729-900-80	TRANSISTOR DTC114ES	
IC808	8-759-634-51	IC M5218AP		Q1003	8-729-030-18	TRANSISTOR 2SD2525	
IC901	8-759-331-39	IC M62427FP		Q1006	8-729-030-19	TRANSISTOR 2SB1640	
IC902	8-759-634-51	IC M5218AP				< RESISTOR >	
IC1001	8-759-231-53	IC TA7805S		R201	1-249-415-11	CARBON 680 5% 1/4W F	
IC1002	8-759-604-86	IC M5F7807L					
IC1003	8-759-604-86	IC M5F7807L					
IC1004	8-759-604-90	IC M5F7907L					

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R202	1-249-435-11	CARBON	33K	5%	1/4W	R414	1-249-429-11	CARBON	10K	5%	1/4W
R211	1-249-415-11	CARBON	680	5%	1/4W F	R415	1-249-429-11	CARBON	10K	5%	1/4W
R212	1-249-435-11	CARBON	33K	5%	1/4W	R416	1-249-429-11	CARBON	10K	5%	1/4W
R224	1-247-807-31	CARBON	100	5%	1/4W	R417	1-249-429-11	CARBON	10K	5%	1/4W
R250	1-249-421-11	CARBON	2. 2K	5%	1/4W F (AEP, UK, G, IT)	R418	1-249-429-11	CARBON	10K	5%	1/4W
R251	1-249-401-11	CARBON	47	5%	1/4W F (AEP, UK, G, IT)	R419	1-249-429-11	CARBON	10K	5%	1/4W
R252	1-249-441-11	CARBON	100K	5%	1/4W (AEP, UK, G, IT)	R420	1-249-429-11	CARBON	10K	5%	1/4W (AEP, UK, G, IT, EE)
R253	1-249-441-11	CARBON	100K	5%	1/4W (AEP, UK, G, IT)	R421	1-249-429-11	CARBON	10K	5%	1/4W (AEP, UK, G, IT, EE)
R254	1-249-426-11	CARBON	5. 6K	5%	1/4W (AEP, UK, G, IT)	R454	1-247-863-91	CARBON	22K	5%	1/4W
R255	1-249-429-11	CARBON	10K	5%	1/4W (AEP, UK, G, IT)	R455	1-247-863-91	CARBON	22K	5%	1/4W
R256	1-247-807-31	CARBON	100	5%	1/4W (AEP, UK, G, IT)	R456	1-249-411-11	CARBON	330	5%	1/4W
R301	1-249-430-11	CARBON	12K	5%	1/4W	R457	1-249-427-11	CARBON	6. 8K	5%	1/4W F
R302	1-249-431-11	CARBON	15K	5%	1/4W	R458	1-249-429-11	CARBON	10K	5%	1/4W
R303	1-249-432-11	CARBON	18K	5%	1/4W (AEP, UK, G, IT, EE)	R461	1-249-417-11	CARBON	1K	5%	1/4W F
R304	1-249-428-11	CARBON	8. 2K	5%	1/4W F	R701	1-249-429-11	CARBON	10K	5%	1/4W
R305	1-249-425-11	CARBON	4. 7K	5%	1/4W F	R702	1-249-437-11	CARBON	47K	5%	1/4W
R306	1-247-840-00	CARBON	2. 4K	5%	1/4W	R703	1-249-437-11	CARBON	47K	5%	1/4W
R307	1-247-863-91	CARBON	22K	5%	1/4W	R704	1-249-429-11	CARBON	10K	5%	1/4W
R308	1-249-421-11	CARBON	2. 2K	5%	1/4W F	R705	1-249-429-11	CARBON	10K	5%	1/4W
R309	1-249-428-11	CARBON	8. 2K	5%	1/4W F	R706	1-249-429-11	CARBON	10K	5%	1/4W
R310	1-249-417-11	CARBON	1K	5%	1/4W F	R708	1-249-423-11	CARBON	3. 3K	5%	1/4W F
R351	1-249-430-11	CARBON	12K	5%	1/4W	R709	1-249-441-11	CARBON	100K	5%	1/4W
R352	1-249-431-11	CARBON	15K	5%	1/4W	R710	1-249-429-11	CARBON	10K	5%	1/4W
R354	1-249-428-11	CARBON	8. 2K	5%	1/4W F	R712	1-249-429-11	CARBON	10K	5%	1/4W
R355	1-249-425-11	CARBON	4. 7K	5%	1/4W F	R713	1-249-429-11	CARBON	10K	5%	1/4W
R356	1-247-840-00	CARBON	2. 4K	5%	1/4W	R714	1-249-429-11	CARBON	10K	5%	1/4W
R357	1-247-863-91	CARBON	22K	5%	1/4W	R715	1-249-429-11	CARBON	10K	5%	1/4W
R358	1-249-421-11	CARBON	2. 2K	5%	1/4W F	R718	1-247-807-31	CARBON	100	5%	1/4W
R359	1-249-428-11	CARBON	8. 2K	5%	1/4W F	R719	1-247-807-31	CARBON	100	5%	1/4W
R360	1-249-417-11	CARBON	1K	5%	1/4W F	R720	1-247-807-31	CARBON	100	5%	1/4W
R401	1-249-425-11	CARBON	4. 7K	5%	1/4W F	R721	1-247-807-31	CARBON	100	5%	1/4W
R402	1-249-425-11	CARBON	4. 7K	5%	1/4W F	R722	1-247-807-31	CARBON	100	5%	1/4W (AEP, UK, G, IT)
R403	1-249-425-11	CARBON	4. 7K	5%	1/4W F	R723	1-247-807-31	CARBON	100	5%	1/4W (AEP, UK, G, IT)
R404	1-249-417-11	CARBON	1K	5%	1/4W F	R724	1-247-807-31	CARBON	100	5%	1/4W
R405	1-249-437-11	CARBON	47K	5%	1/4W	R725	1-247-807-31	CARBON	100	5%	1/4W
R406	1-249-437-11	CARBON	47K	5%	1/4W	R726	1-247-807-31	CARBON	100	5%	1/4W
R407	1-249-437-11	CARBON	47K	5%	1/4W	R727	1-247-807-31	CARBON	100	5%	1/4W
R408	1-249-437-11	CARBON	47K	5%	1/4W	R728	1-247-807-31	CARBON	100	5%	1/4W
R409	1-249-429-11	CARBON	10K	5%	1/4W	R729	1-247-807-31	CARBON	100	5%	1/4W
R410	1-247-882-11	CARBON	130K	5%	1/4W	R730	1-247-807-31	CARBON	100	5%	1/4W
R411	1-247-866-11	CARBON	30K	5%	1/4W	R731	1-247-807-31	CARBON	100	5%	1/4W
R412	1-249-429-11	CARBON	10K	5%	1/4W (AEP, UK, G, IT, EE)	R732	1-247-807-31	CARBON	100	5%	1/4W
R413	1-247-864-11	CARBON	24K	5%	1/4W	R733	1-247-807-31	CARBON	100	5%	1/4W
						R734	1-247-807-31	CARBON	100	5%	1/4W
						R735	1-247-807-31	CARBON	100	5%	1/4W
						R736	1-247-807-31	CARBON	100	5%	1/4W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R737	1-247-807-31	CARBON	100 5% 1/4W	R807	1-249-417-11	CARBON	1K 5% 1/4W F
R738	1-249-427-11	CARBON	6. 8K 5% 1/4W F	R808	1-249-441-11	CARBON	100K 5% 1/4W
R739	1-249-423-11	CARBON	3. 3K 5% 1/4W F	R809	1-247-815-91	CARBON	220 5% 1/4W
R740	1-247-863-91	CARBON	22K 5% 1/4W F (AUS, PX)				(AEP, UK, G, IT, EE)
R740	1-249-423-11	CARBON	10K 5% 1/4W F (AEP, UK)	R810	1-249-417-11	CARBON	1K 5% 1/4W F
				R811	1-249-417-11	CARBON	1K 5% 1/4W F
R740	1-249-425-11	CARBON	4. 7K 5% 1/4W F (E, MX, AR)	R821	1-249-417-11	CARBON	1K 5% 1/4W F
R740	1-249-427-11	CARBON	6. 8K 5% 1/4W F (G, IT)	R822	1-249-441-11	CARBON	100K 5% 1/4W
R740	1-249-435-11	CARBON	33K 5% 1/4W F (EE)	R825	1-247-887-00	CARBON	220K 5% 1/4W
R741	1-247-863-91	CARBON	22K 5% 1/4W F (AUS, PX)	R826	1-249-441-11	CARBON	100K 5% 1/4W
R741	1-249-423-11	CARBON	3. 3K 5% 1/4W F (AEP, UK, G, IT)	R827	1-249-429-11	CARBON	10K 5% 1/4W
				R837	1-249-429-11	CARBON	10K 5% 1/4W
R741	1-249-427-11	CARBON	6. 8K 5% 1/4W F (E, MX, AR, EE)	R838	1-249-431-11	CARBON	15K 5% 1/4W
R742	1-249-413-11	CARBON	470 5% 1/4W F	R839	1-249-431-11	CARBON	15K 5% 1/4W
R743	1-247-807-31	CARBON	100 5% 1/4W	R840	1-249-399-11	CARBON	33 5% 1/4W F
R744	1-247-807-31	CARBON	100 5% 1/4W	R841	1-249-421-11	CARBON	2. 2K 5% 1/4W F
R745	1-247-807-31	CARBON	100 5% 1/4W	R842	1-247-863-91	CARBON	22K 5% 1/4W
R753	1-247-807-31	CARBON	100 5% 1/4W	R843	1-249-431-11	CARBON	15K 5% 1/4W
R755	1-247-807-31	CARBON	100 5% 1/4W	R844	1-249-431-11	CARBON	15K 5% 1/4W
R757	1-247-807-31	CARBON	100 5% 1/4W	R845	1-249-429-11	CARBON	10K 5% 1/4W
R758	1-247-807-31	CARBON	100 5% 1/4W	R846	1-249-431-11	CARBON	15K 5% 1/4W
R759	1-247-807-31	CARBON	100 5% 1/4W	R847	1-249-417-11	CARBON	1K 5% 1/4W F
R760	1-247-807-31	CARBON	100 5% 1/4W	R848	1-247-903-00	CARBON	1M 5% 1/4W
R761	1-247-807-31	CARBON	100 5% 1/4W	R849	1-249-427-11	CARBON	6. 8K 5% 1/4W F
R762	1-249-429-11	CARBON	10K 5% 1/4W	R851	1-249-417-11	CARBON	1K 5% 1/4W F (AEP, UK, G, IT, EE)
R763	1-249-429-11	CARBON	10K 5% 1/4W	R852	1-249-417-11	CARBON	1K 5% 1/4W F
R764	1-247-807-31	CARBON	100 5% 1/4W	R853	1-249-437-11	CARBON	47K 5% 1/4W
R766	1-247-807-31	CARBON	100 5% 1/4W	R854	1-249-419-11	CARBON	1. 5K 5% 1/4W F
R767	1-247-807-31	CARBON	100 5% 1/4W	R855	1-247-897-11	CARBON	560K 5% 1/4W
R768	1-247-807-31	CARBON	100 5% 1/4W	R856	1-249-437-11	CARBON	47K 5% 1/4W
R769	1-247-807-31	CARBON	100 5% 1/4W	R857	1-249-417-11	CARBON	1K 5% 1/4W F
R770	1-247-807-31	CARBON	100 5% 1/4W	R858	1-249-441-11	CARBON	100K 5% 1/4W
R771	1-247-807-31	CARBON	100 5% 1/4W	R859	1-247-815-91	CARBON	220 5% 1/4W (AEP, UK, G, IT, EE)
R772	1-247-807-31	CARBON	100 5% 1/4W	R860	1-249-437-11	CARBON	47K 5% 1/4W
R773	1-247-807-31	CARBON	100 5% 1/4W	R861	1-249-431-11	CARBON	15K 5% 1/4W
R774	1-247-807-31	CARBON	100 5% 1/4W	R862	1-249-427-11	CARBON	6. 8K 5% 1/4W F
R775	1-247-807-31	CARBON	100 5% 1/4W	R863	1-247-887-00	CARBON	220K 5% 1/4W
R776	1-247-807-31	CARBON	100 5% 1/4W	R864	1-247-887-00	CARBON	220K 5% 1/4W
R777	1-249-429-11	CARBON	10K 5% 1/4W	R865	1-247-887-00	CARBON	220K 5% 1/4W
R778	1-249-429-11	CARBON	10K 5% 1/4W F	R866	1-249-441-11	CARBON	100K 5% 1/4W
R801	1-249-417-11	CARBON	1K 5% 1/4W F (AEP, UK, G, IT, EE)	R867	1-249-441-11	CARBON	100K 5% 1/4W
R802	1-249-417-11	CARBON	1K 5% 1/4W F	R868	1-249-441-11	CARBON	100K 5% 1/4W
R803	1-249-437-11	CARBON	47K 5% 1/4W	R871	1-249-417-11	CARBON	1K 5% 1/4W F
R804	1-249-419-11	CARBON	1. 5K 5% 1/4W F	R872	1-249-441-11	CARBON	100K 5% 1/4W
R805	1-247-897-11	CARBON	560K 5% 1/4W	R875	1-249-429-11	CARBON	10K 5% 1/4W
R806	1-249-437-11	CARBON	47K 5% 1/4W	R876	1-249-429-11	CARBON	10K 5% 1/4W
				R877	1-249-429-11	CARBON	10K 5% 1/4W
				R881	1-249-421-11	CARBON	2. 2K 5% 1/4W F

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark				
R882	1-249-417-11	CARBON	1K	5%	1/4W	F	R963	1-249-429-11	CARBON	10K	5%	1/4W	
R883	1-249-429-11	CARBON	10K	5%	1/4W		R964	1-249-437-11	CARBON	47K	5%	1/4W	
R884	1-249-423-11	CARBON	3. 3K	5%	1/4W	F	R965	1-249-441-11	CARBON	100K	5%	1/4W	
R885	1-249-437-11	CARBON	47K	5%	1/4W		R966	1-249-441-11	CARBON	100K	5%	1/4W	
							R967	1-249-429-11	CARBON	10K	5%	1/4W	
R887	1-249-431-11	CARBON	15K	5%	1/4W								
R890	1-247-863-91	CARBON	22K	5%	1/4W		R973	1-249-429-11	CARBON	10K	5%	1/4W	
R901	1-249-425-11	CARBON	4. 7K	5%	1/4W	F				(E, AUS, PX, MX, AR)			
R902	1-249-429-11	CARBON	10K	5%	1/4W		R974	1-247-903-00	CARBON	1M	5%	1/4W	
R904	1-249-437-11	CARBON	47K	5%	1/4W		R1001	1-249-421-11	CARBON	2. 2K	5%	1/4W	F
							R1002	1-247-815-91	CARBON	220	5%	1/4W	
R905	1-249-441-11	CARBON	100K	5%	1/4W		R1003	1-249-417-11	CARBON	1K	5%	1/4W	F
R906	1-247-895-91	CARBON	470K	5%	1/4W								
R907	1-249-437-11	CARBON	47K	5%	1/4W		R1006	1-249-417-11	CARBON	1K	5%	1/4W	F
R908	1-249-429-11	CARBON	10K	5%	1/4W		R1020	1-247-815-91	CARBON	220	5%	1/4W	
R909	1-249-411-11	CARBON	330	5%	1/4W	F	R1021	1-247-815-91	CARBON	220	5%	1/4W	
							R1022	1-249-421-11	CARBON	2. 2K	5%	1/4W	F
R910	1-249-429-11	CARBON	10K	5%	1/4W		R1023	1-249-417-11	CARBON	1K	5%	1/4W	F
R911	1-249-421-11	CARBON	2. 2K	5%	1/4W	F							
R912	1-249-441-11	CARBON	100K	5%	1/4W		R1830	1-249-427-11	CARBON	6. 8K	5%	1/4W	F
R913	1-249-429-11	CARBON	10K	5%	1/4W		R1831	1-249-437-11	CARBON	47K	5%	1/4W	
R914	1-249-437-11	CARBON	47K	5%	1/4W		R1832	1-249-419-11	CARBON	1. 5K	5%	1/4W	F
							R1833	1-249-429-11	CARBON	10K	5%	1/4W	
R915	1-249-441-11	CARBON	100K	5%	1/4W		R1834	1-247-895-91	CARBON	470K	5%	1/4W	
R916	1-249-441-11	CARBON	100K	5%	1/4W								
R917	1-249-429-11	CARBON	10K	5%	1/4W		R1835	1-247-863-91	CARBON	22K	5%	1/4W	
R920	1-249-441-11	CARBON	100K	5%	1/4W		R1836	1-249-429-11	CARBON	10K	5%	1/4W	
R922	1-247-903-00	CARBON	1M	5%	1/4W		R1837	1-249-429-11	CARBON	10K	5%	1/4W	
							R1838	1-249-429-11	CARBON	10K	5%	1/4W	
R923	1-249-429-11	CARBON	10K	5%	1/4W	(E, AUS, PX, MX, AR)	R1839	1-249-419-11	CARBON	1. 5K	5%	1/4W	F
R924	1-247-903-00	CARBON	1M	5%	1/4W								
R930	1-249-429-11	CARBON	10K	5%	1/4W		R1840	1-249-437-11	CARBON	47K	5%	1/4W	
R931	1-249-429-11	CARBON	10K	5%	1/4W		R1841	1-249-431-11	CARBON	12K	5%	1/4W	
R932	1-249-425-11	CARBON	4. 7K	5%	1/4W	F	R1842	1-249-425-11	CARBON	4. 7K	5%	1/4W	F
							R1843	1-249-441-11	CARBON	100K	5%	1/4W	
R933	1-247-895-91	CARBON	470K	5%	1/4W		R1844	1-249-429-11	CARBON	10K	5%	1/4W	
R934	1-249-437-11	CARBON	47K	5%	1/4W								
R938	1-247-807-31	CARBON	100	5%	1/4W		< VARIABLE RESISTOR >						
R939	1-247-807-31	CARBON	100	5%	1/4W		RV301	1-238-600-11	RES, ADJ, CARBON	10K			
R940	1-249-429-11	CARBON	10K	5%	1/4W		RV351	1-238-600-11	RES, ADJ, CARBON	10K			
							< VIBRATOR >						
R941	1-249-429-11	CARBON	10K	5%	1/4W								
R942	1-249-429-11	CARBON	10K	5%	1/4W		X81	1-579-900-21	VIBRATOR, CRYSTAL (4. 332MHz)				
R947	1-247-807-31	CARBON	100	5%	1/4W					(AEP, UK, G, IT)			
R951	1-249-425-11	CARBON	4. 7K	5%	1/4W	F	X701	1-579-175-11	VIBRATOR, CERAMIC (10MHz)				
R952	1-249-429-11	CARBON	10K	5%	1/4W		X702	1-567-098-41	VIBRATOR, CRYSTAL (32kHz)				
							X801	1-527-978-00	OSCILLATOR, CERAMIC (320kHz)				
R953	1-249-437-11	CARBON	47K	5%	1/4W		*****						
R954	1-249-437-11	CARBON	47K	5%	1/4W								
R955	1-249-441-11	CARBON	100K	5%	1/4W								
R956	1-247-895-91	CARBON	470K	5%	1/4W								
R957	1-249-437-11	CARBON	47K	5%	1/4W								
R958	1-249-429-11	CARBON	10K	5%	1/4W								
R959	1-249-411-11	CARBON	330	5%	1/4W	F							
R960	1-249-429-11	CARBON	10K	5%	1/4W								
R961	1-249-421-11	CARBON	2. 2K	5%	1/4W	F							
R962	1-249-441-11	CARBON	100K	5%	1/4W								

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-2007-435-A	MD BOARD, COMPLETE ***** (including MOTOR board)				< IC >	
		MOTOR BOARD		IC601	8-759-710-59	IC NJM4580D-D	
		< CAPACITOR >		IC602	8-759-143-54	IC uPC1330HA	
				IC611	8-759-710-59	IC NJM4580D-D	
						< COIL >	
C301	1-162-289-31	CERAMIC	390PF 10% 50V	L331	1-410-780-11	INDUCTOR 27mH	
C302	1-126-968-11	ELECT	100uF 20% 6.3V	L431	1-410-780-11	INDUCTOR 27mH	
C303	1-162-282-31	CERAMIC	100PF 10% 50V			< MOTOR >	
C304	1-130-483-00	MYLAR	0.01uF 5% 50V				
C305	1-107-715-11	ELECT	22uF 20% 16V	M2	X-3369-111-1	MOTOR ASSY (TRIGGER)	
						< TRANSISTOR >	
C311	1-162-289-31	CERAMIC	390PF 10% 50V	Q621	8-729-142-46	TRANSISTOR 2SC2001-LK	
C313	1-162-282-31	CERAMIC	100PF 10% 50V	Q622	8-729-142-46	TRANSISTOR 2SC2001-LK	
C314	1-130-487-00	MYLAR	0.022uF 5% 50V	Q623	8-729-801-93	TRANSISTOR 2SD1387	
C315	1-126-233-11	ELECT	22uF 20% 50V	Q651	8-729-900-65	TRANSISTOR DTA144ES	
C331	1-137-427-11	FILM	120PF 5% 50V			< RESISTOR >	
				R301	1-247-881-00	CARBON 120K 5% 1/4W	
C332	1-162-288-31	CERAMIC	330PF 10% 50V	R302	1-249-409-11	CARBON 220 5% 1/4W F	
C333	1-162-209-31	CERAMIC	27PF 5% 50V	R303	1-249-433-11	CARBON 22K 5% 1/4W	
C401	1-162-289-31	CERAMIC	390PF 10% 50V	R304	1-247-889-00	CARBON 270K 5% 1/4W	
C402	1-126-968-11	ELECT	100uF 20% 6.3V	R305	1-247-858-11	CARBON 13K 5% 1/4W	
C403	1-162-282-31	CERAMIC	100PF 10% 50V				
				R311	1-247-881-00	CARBON 120K 5% 1/4W	
C404	1-130-483-00	MYLAR	0.01uF 5% 50V	R312	1-247-807-31	CARBON 100 5% 1/4W	
C405	1-107-715-11	ELECT	22uF 20% 16V	R314	1-247-882-11	CARBON 130K 5% 1/4W	
C411	1-162-289-31	CERAMIC	390PF 10% 50V	R315	1-247-850-11	CARBON 6.2K 5% 1/4W	
C413	1-162-282-31	CERAMIC	100PF 10% 50V	R331	1-249-430-11	CARBON 12K 5% 1/4W	
C414	1-130-487-00	MYLAR	0.022uF 5% 50V				
				R401	1-247-881-00	CARBON 120K 5% 1/4W	
C415	1-126-233-11	ELECT	22uF 20% 50V	R402	1-249-409-11	CARBON 220 5% 1/4W F	
C431	1-137-427-11	FILM	120PF 5% 50V	R403	1-249-433-11	CARBON 22K 5% 1/4W	
C432	1-162-288-31	CERAMIC	330PF 10% 50V	R404	1-247-889-00	CARBON 270K 5% 1/4W	
C433	1-162-209-31	CERAMIC	27PF 5% 50V	R405	1-247-858-11	CARBON 13K 5% 1/4W	
C601	1-126-157-11	ELECT	10uF 20% 16V				
				R411	1-247-881-00	CARBON 120K 5% 1/4W	
C602	1-126-157-11	ELECT	10uF 20% 16V	R412	1-247-807-31	CARBON 100 5% 1/4W	
C611	1-124-907-11	ELECT	10uF 20% 50V	R414	1-247-882-11	CARBON 130K 5% 1/4W	
C612	1-124-907-11	ELECT	10uF 20% 50V	R415	1-247-850-11	CARBON 6.2K 5% 1/4W	
C621	1-137-150-11	FILM	0.01uF 5% 100V	R431	1-249-430-11	CARBON 12K 5% 1/4W	
C622	1-126-961-11	ELECT	2.2uF 20% 50V				
				R601	1-249-409-11	CARBON 220 5% 1/4W F	
C623	1-136-155-00	FILM	0.015uF 5% 50V	R602	1-249-409-11	CARBON 220 5% 1/4W F	
C624	1-130-481-00	MYLAR	0.0068uF 5% 50V	R608	1-249-409-11	CARBON 220 5% 1/4W F	
C625	1-130-481-00	MYLAR	0.0068uF 5% 50V	R609	1-249-433-11	CARBON 22K 5% 1/4W	
C627	1-124-903-11	ELECT	1uF 20% 50V	R611	1-249-409-11	CARBON 220 5% 1/4W F	
C628	1-136-153-00	FILM	0.01uF 5% 50V				
				R612	1-249-409-11	CARBON 220 5% 1/4W F	
C642	1-104-664-11	ELECT	47uF 20% 16V	△R621	1-212-851-00	FUSIBLE 5.6 5% 1/4W F	
C651	1-161-494-00	CERAMIC	0.022uF 25V	△R622	1-212-851-00	FUSIBLE 5.6 5% 1/4W F	
				R623	1-249-432-11	CARBON 18K 5% 1/4W	
				R624	1-249-432-11	CARBON 18K 5% 1/4W	
		< CONNECTOR >					
* CN601	1-568-864-11	SOCKET, CONNECTOR 21P					
* CN602	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P					
* CN651	1-564-521-11	PLUG, CONNECTOR 6P					

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R625	1-249-429-11	CARBON	10K 5% 1/4W	R907	1-249-436-11	CARBON	39K 5% 1/4W
R651	1-247-856-00	CARBON	11K 5% 1/4W	R911	1-249-441-11	CARBON	100K 5% 1/4W
R652	1-247-856-00	CARBON	11K 5% 1/4W	R931	1-247-887-00	CARBON	220K 5% 1/4W
R653	1-249-441-11	CARBON	100K 5% 1/4W				
< VARIABLE RESISTOR >				< VARIABLE RESISTOR >			
RV301	1-238-598-11	RES, ADJ, CARBON 2.2K		RV901	1-223-983-11	RES, VAR, CARBON 50K (MIC LEVEL)	
RV311	1-238-598-11	RES, ADJ, CARBON 2.2K		*****			
RV341	1-238-551-11	RES, ADJ, CARBON 220K		*	A-4389-163-A	PANEL BOARD, COMPLETE (AEP, UK, G, IT, EE)	
RV401	1-238-598-11	RES, ADJ, CARBON 2.2K				*****	
RV411	1-238-598-11	RES, ADJ, CARBON 2.2K		*	A-4389-165-A	PANEL BOARD, COMPLETE (E, AUS, PX, MX, AR)	
RV441	1-238-551-11	RES, ADJ, CARBON 220K				*****	
RV651	1-238-599-11	RES, ADJ, CARBON 4.7K					
RV652	1-238-599-11	RES, ADJ, CARBON 4.7K			4-971-014-11	HOLDER, FL TUBE	
< TRANSFORMER >				< CAPACITOR >			
T621	1-423-980-11	TRANSFORMER, BIAS OSCILLATION		C501	1-124-465-00	ELECT	0.47uF 20% 50V
*****				C502	1-164-159-21	CERAMIC	0.1uF 50V
*	1-659-414-11	MIC BOARD (E, AUS, PX, MX, AR)		C503	1-124-465-00	ELECT	0.47uF 20% 50V
		*****		C504	1-164-159-21	CERAMIC	0.1uF 50V
< CAPACITOR >				C505	1-162-294-31	CERAMIC	0.001uF 10% 50V
C901	1-162-306-11	CERAMIC	0.01uF 30% 16V	C506	1-126-177-11	ELECT	100uF 20% 10V
C903	1-162-294-31	CERAMIC	0.001uF 10% 50V	C511	1-164-159-21	CERAMIC	0.1uF 50V
C904	1-124-257-00	ELECT	2.2uF 20% 50V	C512	1-164-159-21	CERAMIC	0.1uF 50V
C905	1-162-215-31	CERAMIC	47PF 5% 50V	C513	1-164-159-21	CERAMIC	0.1uF 50V
C906	1-162-290-31	CERAMIC	470PF 10% 50V	C514	1-164-159-21	CERAMIC	0.1uF 50V
C907	1-124-259-00	ELECT	2.2uF 20% 50V	C515	1-126-793-11	ELECT	33uF 20% 35V
C908	1-124-257-00	ELECT	2.2uF 20% 50V	C518	1-126-157-11	ELECT	10uF 20% 16V
C909	1-162-215-31	CERAMIC	47PF 5% 50V	C519	1-164-159-21	CERAMIC	0.1uF 50V
C910	1-162-286-21	CERAMIC	220PF 10% 50V	C520	1-164-159-21	CERAMIC	0.1uF 50V
C911	1-126-963-11	ELECT	4.7uF 20% 50V	C521	1-164-159-21	CERAMIC	0.1uF 50V
C931	1-126-964-11	ELECT	10uF 20% 50V	C522	1-164-159-21	CERAMIC	0.1uF 50V
C941	1-126-964-11	ELECT	10uF 20% 50V	C523	1-126-177-11	ELECT	100uF 20% 10V
< IC >				C524	1-126-177-11	ELECT	100uF 20% 10V
IC901	8-759-634-51	IC M5218AP		C545	1-162-306-11	CERAMIC	0.01uF 30% 16V
< JACK >				C546	1-162-306-11	CERAMIC	0.01uF 30% 16V
J901	1-573-151-11	JACK, LARGE TYPE (MIC)		C547	1-126-157-11	ELECT	10uF 20% 16V
< RESISTOR >				C549	1-126-177-11	ELECT	100uF 20% 10V
R901	1-249-429-11	CARBON	10K 5% 1/4W	C601	1-126-157-11	ELECT	10uF 20% 16V
R902	1-249-417-11	CARBON	1K 5% 1/4W F	C3002	1-164-159-21	CERAMIC	0.1uF 50V
R903	1-249-441-11	CARBON	100K 5% 1/4W	C3010	1-162-294-31	CERAMIC	0.001uF 10% 50V
R904	1-249-417-11	CARBON	1K 5% 1/4W F	C3034	1-126-177-11	ELECT	100uF 20% 10V
R905	1-247-863-91	CARBON	22K 5% 1/4W	C3046	1-126-177-11	ELECT	100uF 20% 10V
R906	1-249-421-11	CARBON	2.2K 5% 1/4W F	C3048	1-126-177-11	ELECT	100uF 20% 10V
				C3049	1-164-159-21	CERAMIC	0.1uF 50V
				C3201	1-126-163-11	ELECT	4.7uF 20% 50V
				C3202	1-136-169-00	FILM	0.22uF 5% 50V
				C3203	1-124-464-11	ELECT	0.22uF 20% 50V
				C3211	1-124-465-00	ELECT	0.47uF 20% 50V
				C3212	1-136-155-00	FILM	0.015uF 5% 50V



# PANEL

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C3213	1-124-464-11	ELECT	0.22uF 20% 50V			< COIL >	
C3221	1-136-167-00	FILM	0.15uF 5% 50V	L511	1-410-521-11	INDUCTOR	100uH
C3222	1-162-302-11	CERAMIC	0.0022uF 30% 16V			< TRANSISTOR >	
C3223	1-124-464-11	ELECT	0.22uF 20% 50V	Q601	8-729-422-57	TRANSISTOR	UN4111
C3232	1-162-293-31	CERAMIC	820PF 10% 50V	Q603	8-729-422-57	TRANSISTOR	UN4111
C3233	1-124-464-11	ELECT	0.22uF 20% 50V	Q605	8-729-422-57	TRANSISTOR	UN4111
		< CONNECTOR >		Q611	8-729-119-76	TRANSISTOR	2SA1175-HFE
CN501	1-568-802-11	SOCKET, CONNECTOR 19P (AEP, UK, G, IT, EE)		Q612	8-729-119-76	TRANSISTOR	2SA1175-HFE
CN501	1-568-838-11	SOCKET, CONNECTOR 21P (E, AUS, PX, MX, AR)					
		< DIODE >		Q621	8-729-119-76	TRANSISTOR	2SA1175-HFE
D503	8-719-987-63	DIODE	1N4148M	Q622	8-729-119-76	TRANSISTOR	2SA1175-HFE
D511	8-719-987-63	DIODE	1N4148M	Q623	8-729-119-76	TRANSISTOR	2SA1175-HFE
D512	8-719-987-63	DIODE	1N4148M	Q624	8-729-119-76	TRANSISTOR	2SA1175-HFE
D601	8-719-058-03	DIODE	SEL5423E-TP15 (TUNER/BAND)	Q625	8-729-119-76	TRANSISTOR	2SA1175-HFE
D602	8-719-058-03	DIODE	SEL5423E-TP15 (TUNER/BAND)				
D611	8-719-058-04	DIODE	SEL5223S-TP15 (EFFECT)	Q629	8-729-119-76	TRANSISTOR	2SA1175-HFE
D612	8-719-058-04	DIODE	SEL5223S-TP15 (ROCK, GAME)	Q630	8-729-119-76	TRANSISTOR	2SA1175-HFE
D613	8-719-058-04	DIODE	SEL5223S-TP15 (POPS, DANCE)	Q631	8-729-119-76	TRANSISTOR	2SA1175-HFE
D614	8-719-058-04	DIODE	SEL5223S-TP15 (JAZZ, STADIUM)	Q632	8-729-119-76	TRANSISTOR	2SA1175-HFE
D615	8-719-058-04	DIODE	SEL5223S-TP15 (CLASSIC, STUDIO)	Q633	8-729-119-76	TRANSISTOR	2SA1175-HFE
D616	8-719-058-04	DIODE	SEL5223S-TP15 (SALSA, CHURCH)				
D617	8-719-058-04	DIODE	SEL5223S-TP15 (P FILE)	Q634	8-729-119-76	TRANSISTOR	2SA1175-HFE
D618	8-719-058-04	DIODE	SEL5223S-TP15 (MORE 5)	Q636	8-729-119-78	TRANSISTOR	2SC2785-HFE
D619	8-719-057-09	DIODE	LNJ801LPDJA (ENTER/NEXT)	Q3141	8-729-900-80	TRANSISTOR	DTC114ES
D620	8-719-058-04	DIODE	SEL5223S-TP15 (SELECT 5)	Q3151	8-729-900-80	TRANSISTOR	DTC114ES
				Q3152	8-729-903-02	TRANSISTOR	DTA143XS
						< RESISTOR >	
D627	8-719-058-04	DIODE	SEL5223S-TP15 (SUPER WOOFER)	R501	1-249-419-11	CARBON	1.5K 5% 1/4W F
D3026	8-719-987-63	DIODE	1N4148M	R502	1-249-401-11	CARBON	47 5% 1/4W F
D3027	8-719-987-63	DIODE	1N4148M	R503	1-249-403-11	CARBON	68 5% 1/4W F
D3028	8-719-987-63	DIODE	1N4148M	R504	1-247-807-31	CARBON	100 5% 1/4W
D3029	8-719-987-63	DIODE	1N4148M	R505	1-249-407-11	CARBON	150 5% 1/4W F
D3201	8-719-987-63	DIODE	1N4148M	R506	1-249-407-11	CARBON	150 5% 1/4W F
D3211	8-719-987-63	DIODE	1N4148M	R507	1-247-815-91	CARBON	220 5% 1/4W
D3221	8-719-987-63	DIODE	1N4148M	R508	1-249-411-11	CARBON	330 5% 1/4W
D3231	8-719-987-63	DIODE	1N4148M	R509	1-249-413-11	CARBON	470 5% 1/4W F
D3241	8-719-987-63	DIODE	1N4148M	R510	1-249-415-11	CARBON	680 5% 1/4W F
D3242	8-719-987-63	DIODE	1N4148M	R511	1-249-417-11	CARBON	1K 5% 1/4W F
				R517	1-249-419-11	CARBON	1.5K 5% 1/4W F
		< FLUORESCENT INDICATOR >		R518	1-249-401-11	CARBON	47 5% 1/4W F
FL501	1-517-490-21	INDICATOR TUBU, FLUORESCENT		R519	1-249-403-11	CARBON	68 5% 1/4W F
		< IC >		R520	1-247-807-31	CARBON	100 5% 1/4W
IC501	8-759-375-43	IC	ASD0204-012-3BA				
IC502	8-759-339-53	IC	GP1U28XB (E)	R521	1-249-407-11	CARBON	150 5% 1/4W F
IC503	8-759-140-53	IC	uPD4053BC	R522	1-249-407-11	CARBON	150 5% 1/4W F
IC504	8-759-916-14	IC	SN74HC04AN	R523	1-247-815-91	CARBON	220 5% 1/4W
				R524	1-249-411-11	CARBON	330 5% 1/4W
				R525	1-249-413-11	CARBON	470 5% 1/4W F
				R526	1-249-415-11	CARBON	680 5% 1/4W F
				R527	1-249-419-11	CARBON	1.5K 5% 1/4W F
				R528	1-249-401-11	CARBON	47 5% 1/4W F
				R529	1-249-403-11	CARBON	68 5% 1/4W F

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R530	1-247-807-31	CARBON	100	5%	1/4W	R3011	1-247-903-00	CARBON	1M	5%	1/4W
R531	1-249-407-11	CARBON	150	5%	1/4W F	R3015	1-249-429-11	CARBON	10K	5%	1/4W
R532	1-249-407-11	CARBON	150	5%	1/4W F	R3019	1-249-429-11	CARBON	10K	5%	1/4W
R548	1-249-419-11	CARBON	1.5K	5%	1/4W F	R3020	1-249-429-11	CARBON	10K	5%	1/4W
R549	1-247-807-31	CARBON	100	5%	1/4W	R3021	1-249-429-11	CARBON	10K	5%	1/4W
R550	1-249-407-11	CARBON	150	5%	1/4W F	R3022	1-249-429-11	CARBON	10K	5%	1/4W
R551	1-249-407-11	CARBON	150	5%	1/4W F	R3023	1-249-429-11	CARBON	10K	5%	1/4W
R552	1-247-815-91	CARBON	220	5%	1/4W	R3024	1-249-429-11	CARBON	10K	5%	1/4W
R553	1-249-429-11	CARBON	10K	5%	1/4W	R3036	1-249-429-11	CARBON	10K	5%	1/4W
R554	1-249-441-11	CARBON	100K	5%	1/4W	R3037	1-249-429-11	CARBON	10K	5%	1/4W
R564	1-249-419-11	CARBON	1.5K	5%	1/4W F	R3038	1-249-429-11	CARBON	10K	5%	1/4W
R565	1-247-807-31	CARBON	100	5%	1/4W	R3041	1-249-429-11	CARBON	10K	5%	1/4W
R566	1-249-407-11	CARBON	150	5%	1/4W F	R3042	1-249-423-11	CARBON	3.3K	5%	1/4W F
R567	1-249-407-11	CARBON	150	5%	1/4W F	R3049	1-249-429-11	CARBON	10K	5%	1/4W
R586	1-247-815-91	CARBON	220	5%	1/4W	R3050	1-249-429-11	CARBON	10K	5%	1/4W
R588	1-247-815-91	CARBON	220	5%	1/4W	R3051	1-249-429-11	CARBON	10K	5%	1/4W
R591	1-249-403-11	CARBON	68	5%	1/4W F	R3053	1-249-429-11	CARBON	10K	5%	1/4W
R592	1-249-401-11	CARBON	47	5%	1/4W F	R3087	1-249-441-11	CARBON	100K	5%	1/4W
R593	1-249-403-11	CARBON	68	5%	1/4W F	R3110	1-247-807-31	CARBON	100	5%	1/4W
R594	1-249-401-11	CARBON	47	5%	1/4W F	R3115	1-247-807-31	CARBON	100	5%	1/4W
R611	1-249-429-11	CARBON	10K	5%	1/4W	R3122	1-247-807-31	CARBON	100	5%	1/4W
R612	1-249-421-11	CARBON	2.2K	5%	1/4W F	R3123	1-247-807-31	CARBON	100	5%	1/4W
R613	1-249-429-11	CARBON	10K	5%	1/4W	R3124	1-247-807-31	CARBON	100	5%	1/4W
R614	1-249-421-11	CARBON	2.2K	5%	1/4W F	R3138	1-247-807-31	CARBON	100	5%	1/4W
R633	1-249-407-11	CARBON	150	5%	1/4W F	R3201	1-249-411-11	CARBON	330	5%	1/4W
R634	1-249-407-11	CARBON	150	5%	1/4W F	R3202	1-249-437-11	CARBON	47K	5%	1/4W
R635	1-249-407-11	CARBON	150	5%	1/4W F	R3203	1-247-895-91	CARBON	470K	5%	1/4W
R636	1-249-407-11	CARBON	150	5%	1/4W F	R3204	1-247-899-11	CARBON	680K	5%	1/4W
R637	1-249-407-11	CARBON	150	5%	1/4W F	R3211	1-249-411-11	CARBON	330	5%	1/4W
R641	1-249-406-11	CARBON	120	5%	1/4W F	R3212	1-249-437-11	CARBON	47K	5%	1/4W
R642	1-247-807-31	CARBON	100	5%	1/4W	R3213	1-247-895-91	CARBON	470K	5%	1/4W
R643	1-247-807-31	CARBON	100	5%	1/4W	R3214	1-247-899-11	CARBON	680K	5%	1/4W
R644	1-249-406-11	CARBON	120	5%	1/4W F	R3221	1-249-411-11	CARBON	330	5%	1/4W
R645	1-249-407-11	CARBON	150	5%	1/4W F	R3222	1-249-437-11	CARBON	47K	5%	1/4W
R646	1-249-406-11	CARBON	120	5%	1/4W F	R3223	1-247-895-91	CARBON	470K	5%	1/4W
R648	1-249-425-11	CARBON	4.7K	5%	1/4W F	R3224	1-247-899-11	CARBON	680K	5%	1/4W
R649	1-249-425-11	CARBON	4.7K	5%	1/4W F	R3231	1-247-807-31	CARBON	100	5%	1/4W
R650	1-249-425-11	CARBON	4.7K	5%	1/4W F	R3232	1-249-437-11	CARBON	47K	5%	1/4W
R651	1-249-425-11	CARBON	4.7K	5%	1/4W F	R3233	1-247-895-91	CARBON	470K	5%	1/4W
R652	1-249-425-11	CARBON	4.7K	5%	1/4W F	R3234	1-247-899-11	CARBON	680K	5%	1/4W
R656	1-249-425-11	CARBON	4.7K	5%	1/4W F	R3241	1-249-421-11	CARBON	2.2K	5%	1/4W F
R657	1-249-425-11	CARBON	4.7K	5%	1/4W F	R3242	1-249-393-11	CARBON	10	5%	1/4W F
R658	1-249-425-11	CARBON	4.7K	5%	1/4W F	< SWITCH >					
R659	1-249-425-11	CARBON	4.7K	5%	1/4W F	S501	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)			
R660	1-249-425-11	CARBON	4.7K	5%	1/4W F	S502	1-554-303-21	SWITCH, TACTILE (SLEEP)			
R661	1-249-425-11	CARBON	4.7K	5%	1/4W F	S503	1-554-303-21	SWITCH, TACTILE (CLOCK SET)			
R698	1-249-393-11	CARBON	10	5%	1/4W F	S504	1-554-303-21	SWITCH, TACTILE (EFFECT)			
R700	1-249-393-11	CARBON	10	5%	1/4W F	S506	1-554-303-21	SWITCH, TACTILE (KARAOKEPON/MPX)			
R875	1-247-815-91	CARBON	220	5%	1/4W						
(E, AUS, PX, MX, AR)						(E, AUS, PX, MX, AR)					



# PANEL

# POWER AMP

Ref.No.	Part No.	Description	Remark
S507	1-554-303-21	SWITCH, TACTILE (TUNING MODE)	
S508	1-554-303-21	SWITCH, TACTILE (>)	
S509	1-554-303-21	SWITCH, TACTILE (^)	
S510	1-554-303-21	SWITCH, TACTILE (<)	
S511	1-554-303-21	SWITCH, TACTILE (v)	
S517	1-554-303-21	SWITCH, TACTILE (ENTER/NEXT)	
S518	1-554-303-21	SWITCH, TACTILE (DISPLAY/DEMO)	
S519	1-554-303-21	SWITCH, TACTILE (REC)	
S520	1-554-303-21	SWITCH, TACTILE (DAILY 2)	
S521	1-554-303-21	SWITCH, TACTILE (DAILY 1)	
S522	1-554-303-21	SWITCH, TACTILE (TIMER SET)	
S525	1-554-303-21	SWITCH, TACTILE (FUNCTION)	
S526	1-554-303-21	SWITCH, TACTILE (EQ MEMORY)	
S527	1-554-303-21	SWITCH, TACTILE (FILE 1)	
S528	1-554-303-21	SWITCH, TACTILE (FILE 2)	
S529	1-554-303-21	SWITCH, TACTILE (FILE 3)	
S530	1-554-303-21	SWITCH, TACTILE (FILE 4)	
S531	1-554-303-21	SWITCH, TACTILE (FILE SELECT)	
S532	1-554-303-21	SWITCH, TACTILE (FILE 5)	
S549	1-554-303-21	SWITCH, TACTILE (SUPER WOOFER)	
S550	1-554-303-21	SWITCH, TACTILE (SURROUND)	
S551	1-554-303-21	SWITCH, TACTILE (DBFB)	
S552	1-554-303-21	SWITCH, TACTILE (TUNER/BAND)	
S553	1-554-303-21	SWITCH, TACTILE (PTY) (AEP, UK, G, IT, EE)	
S565	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)	
S566	1-554-303-21	SWITCH, TACTILE (TUNER MEMORY)	
S567	1-554-303-21	SWITCH, TACTILE (+ TUNING)	
S568	1-554-303-21	SWITCH, TACTILE (- TUNING)	
S579	1-467-869-11	ENCODER, ROTARY (VOLUME)	
< VIBRATOR >			
X3001	1-579-233-11	VIBRATOR, CERAMIC (4MHz)	
*****			
A-4389-210-A POWER AMP BOARD, COMPLETE			
(AEP, UK, G, IT, EE)			
*****			
A-4389-212-A POWER AMP BOARD, COMPLETE			
(E, AUS, PX, MX, AR)			
*****			
1-537-770-21 TERMINAL BOARD, GROUND			
7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S			
< CAPACITOR >			
C1201	1-126-963-11	ELECT	4.7uF 20% 50V
C1202	1-136-171-00	FILM	0.33uF 10% 50V
C1203	1-102-978-00	CERAMIC	220PF 5% 50V
C1204	1-126-967-11	ELECT	47uF 20% 50V
C1205	1-126-967-11	ELECT	47uF 20% 50V

Ref.No.	Part No.	Description	Remark
C1206	1-126-968-11	ELECT	100uF 20% 50V
C1208	1-126-965-11	ELECT	22uF 20% 50V
C1210	1-136-495-11	FILM	0.068uF 5% 50V
C1211	1-136-495-11	FILM	0.068uF 5% 50V
C1221	1-126-968-11	ELECT	100uF 20% 50V
C1223	1-126-968-11	ELECT	100uF 20% 50V
C1225	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1230	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1247	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1248	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1249	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1251	1-126-963-11	ELECT	4.7uF 20% 50V
C1252	1-102-824-00	CERAMIC	470PF 5% 50V
C1253	1-102-978-00	CERAMIC	220PF 5% 50V
C1254	1-126-967-11	ELECT	47uF 20% 50V
C1255	1-126-967-11	ELECT	47uF 20% 50V
C1256	1-126-968-11	ELECT	100uF 20% 50V
C1260	1-136-495-11	FILM	0.068uF 5% 50V
C1261	1-136-495-11	FILM	0.068uF 5% 50V
C1291	1-130-781-00	FILM	0.22uF 10% 100V
C1292	1-130-781-00	FILM	0.22uF 10% 100V
C1293	1-126-258-11	ELECT	4700uF 20% 56V
C1294	1-126-258-11	ELECT	4700uF 20% 56V
C1297	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1298	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1299	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1301	1-126-963-11	ELECT	4.7uF 20% 50V
C1302	1-102-824-00	CERAMIC	470PF 5% 50V
C1303	1-102-978-00	CERAMIC	220PF 5% 50V
C1304	1-126-967-11	ELECT	47uF 20% 50V
C1305	1-126-967-11	ELECT	47uF 20% 50V
C1306	1-126-968-11	ELECT	100uF 20% 50V
C1308	1-126-965-11	ELECT	22uF 20% 50V
C1310	1-136-495-11	FILM	0.068uF 5% 50V
C1311	1-136-495-11	FILM	0.068uF 5% 50V
C1321	1-126-968-11	ELECT	100uF 20% 50V
C1323	1-126-968-11	ELECT	100uF 20% 50V
C1325	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1330	1-164-159-11	CERAMIC	0.1uF 50V (AEP, UK, G, IT, EE)
C1348	1-136-495-11	FILM	0.068uF 5% 50V (AEP, UK, G, IT, EE)

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C1348	1-164-159-21	CERAMIC	0. 1uF	50V		D1436	8-719-987-63	DIODE	1N4148M		
				(AEP, UK, G, IT, EE)		D1437	8-719-987-63	DIODE	1N4148M		
C1349	1-136-495-11	FILM	0. 068uF	5%	50V						
				(AEP, UK, G, IT, EE)		D1438	8-719-987-63	DIODE	1N4148M		
C1349	1-164-159-21	CERAMIC	0. 1uF	50V		D1451	8-719-987-63	DIODE	1N4148M		
				(AEP, UK, G, IT, EE)		D1452	8-719-987-63	DIODE	1N4148M		
C1351	1-126-963-11	ELECT	4. 7uF	20%	50V	D1453	8-719-987-63	DIODE	1N4148M		
C1352	1-136-171-00	FILM	0. 33uF	10%	50V	D1454	8-719-987-63	DIODE	1N4148M		
C1353	1-102-978-00	CERAMIC	220PF	5%	50V	D1455	8-719-987-63	DIODE	1N4148M		
C1354	1-126-967-11	ELECT	47uF	20%	50V	D1481	8-719-987-63	DIODE	1N4148M		
C1355	1-126-967-11	ELECT	47uF	20%	50V						
C1356	1-126-968-11	ELECT	100uF	20%	50V			< IC >			
C1360	1-136-495-11	FILM	0. 068uF	5%	50V						
						IC1201	8-749-900-24	IC	STK-4162MK2		
C1361	1-136-495-11	FILM	0. 068uF	5%	50V	IC1301	8-749-900-24	IC	STK-4162MK2		
C1398	1-136-495-11	FILM	0. 068uF	5%	50V	IC1421	8-759-111-68	IC	uPC1237HA		
				(AEP, UK, G, IT, EE)							
C1398	1-164-159-21	CERAMIC	0. 1uF	50V				< COIL >			
				(AEP, UK, G, IT, EE)							
C1399	1-136-495-11	FILM	0. 068uF	5%	50V	L1201	1-420-872-00	COIL,	AIR-CORE		
				(AEP, UK, G, IT, EE)		L1251	1-420-872-00	COIL,	AIR-CORE		
C1399	1-164-159-21	CERAMIC	0. 1uF	50V		L1301	1-420-872-00	COIL,	AIR-CORE		
				(AEP, UK, G, IT, EE)		L1351	1-420-872-00	COIL,	AIR-CORE		
C1401	1-126-923-11	ELECT	220uF	20%	10V			< TRANSISTOR >			
C1421	1-126-923-11	ELECT	220uF	20%	10V						
C1422	1-126-923-11	ELECT	220uF	20%	10V	Q1201	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA		
C1423	1-124-925-11	ELECT	2. 2uF	20%	100V	Q1251	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA		
C1424	1-126-933-11	ELECT	100uF	20%	10V	Q1301	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA		
						Q1351	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA		
C1425	1-126-964-11	ELECT	10uF	20%	50V	Q1421	8-729-900-63	TRANSISTOR	DTA124ES		
C1492	1-136-157-00	FILM	0. 022uF	5%	50V						
				(AEP, UK, G, IT, EE)		Q1422	8-729-900-65	TRANSISTOR	DTA114ES		
C1492	1-164-159-21	CERAMIC	0. 1uF	50V		Q1423	8-729-119-78	TRANSISTOR	2SC2785-HFE		
				(AEP, UK, G, IT, EE)		Q1451	8-729-900-80	TRANSISTOR	DTC114ES		
C1493	1-136-157-00	FILM	0. 022uF	5%	50V	Q1452	8-729-119-78	TRANSISTOR	2SC2785-HFE		
				(AEP, UK, G, IT, EE)		Q1453	8-729-119-78	TRANSISTOR	2SC2785-HFE		
		< CONNECTOR >						< RESISTOR >			
* CN1201	1-766-957-11	CONNECTOR, BOARD TO BOARD 20P				R1201	1-249-417-11	CARBON	1K 5%	1/4W F	
		< DIODE >				R1202	1-249-437-11	CARBON	47K 5%	1/4W	
						R1203	1-249-417-11	CARBON	1K 5%	1/4W F	
D1201	8-719-987-63	DIODE	1N4148M			R1204	1-249-437-11	CARBON	47K 5%	1/4W	
D1204	8-719-987-63	DIODE	1N4148M			R1205	1-249-425-11	CARBON	4. 7K 5%	1/4W F	
D1251	8-719-987-63	DIODE	1N4148M								
D1291	8-719-302-38	DIODE	RBV-602-01			R1206	1-249-425-11	CARBON	4. 7K 5%	1/4W F	
D1301	8-719-987-63	DIODE	1N4148M			R1207	1-249-425-11	CARBON	4. 7K 5%	1/4W F	
						R1208	1-249-425-11	CARBON	4. 7K 5%	1/4W F	
D1304	8-719-987-63	DIODE	1N4148M			△R1209	1-212-881-11	FUSIBLE	100 5%	1/4W F	
D1351	8-719-987-63	DIODE	1N4148M			△R1210	1-208-602-11	WIREWOUND	0. 22 10%	2W F	
D1401	8-719-987-63	DIODE	1N4148M								
D1402	8-719-987-63	DIODE	1N4148M			R1211	1-249-417-11	CARBON	1K 5%	1/4W F	
D1421	8-719-987-63	DIODE	1N4148M			R1212	1-249-431-11	CARBON	15K 5%	1/4W	
						R1213	1-249-441-11	CARBON	100K 5%	1/4W	
D1431	8-719-987-63	DIODE	1N4148M			R1214	1-249-421-11	CARBON	2. 2K 5%	1/4W F	
D1432	8-719-987-63	DIODE	1N4148M			R1215	1-249-421-11	CARBON	2. 2K 5%	1/4W F	
D1435	8-719-987-63	DIODE	1N4148M								
						R1216	1-249-421-11	CARBON	2. 2K 5%	1/4W F	

The components identified by mark  or dotted line with mark  are critical for safety.  
Replace only with part number specified.

# POWER AMP

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R1217	1-249-421-11	CARBON	2. 2K 5% 1/4W F	R1320	1-249-389-11	CARBON	4. 7 5% 1/4W F
R1218	1-247-791-91	CARBON	22 5% 1/4W	R1321	1-249-389-11	CARBON	4. 7 5% 1/4W F
R1219	1-247-791-91	CARBON	22 5% 1/4W	R1329	1-249-429-11	CARBON	10K 5% 1/4W
R1220	1-249-389-11	CARBON	4. 7 5% 1/4W F	R1348	1-249-385-11	CARBON	2. 2 5% 1/6W F
R1221	1-249-389-11	CARBON	4. 7 5% 1/4W F			(AEP, UK, G, IT, EE)	
R1229	1-249-429-11	CARBON	10K 5% 1/4W	R1349	1-249-385-11	CARBON	2. 2 5% 1/6W F
R1248	1-249-385-11	CARBON	2. 2 5% 1/6W F			(AEP, UK, G, IT, EE)	
R1249	1-249-385-11	CARBON	2. 2 5% 1/6W F	R1351	1-249-417-11	CARBON	1K 5% 1/4W F
		(AEP, UK, G, IT, EE)		R1352	1-249-437-11	CARBON	47K 5% 1/4W
R1251	1-249-417-11	CARBON	1K 5% 1/4W F	R1353	1-249-417-11	CARBON	1K 5% 1/4W F
R1252	1-249-437-11	CARBON	47K 5% 1/4W	R1354	1-249-437-11	CARBON	47K 5% 1/4W
R1253	1-249-413-11	CARBON	470 5% 1/4W F	R1355	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R1254	1-249-437-11	CARBON	47K 5% 1/4W	R1356	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R1255	1-249-425-11	CARBON	4. 7K 5% 1/4W F	R1357	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R1256	1-249-425-11	CARBON	4. 7K 5% 1/4W F	R1358	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R1257	1-249-425-11	CARBON	4. 7K 5% 1/4W F	△R1359	1-212-881-11	FUSIBLE	100 5% 1/4W F
R1258	1-249-425-11	CARBON	4. 7K 5% 1/4W F	△R1360	1-208-602-11	WIREWOUND	0. 22 10% 2W F
△R1259	1-212-881-11	FUSIBLE	100 5% 1/4W F	R1361	1-249-417-11	CARBON	1K 5% 1/4W F
△R1260	1-208-602-11	WIREWOUND	0. 22 10% 2W F	R1362	1-249-431-11	CARBON	15K 5% 1/4W
R1261	1-249-417-11	CARBON	1K 5% 1/4W F	R1363	1-249-441-11	CARBON	100K 5% 1/4W
R1262	1-249-431-11	CARBON	15K 5% 1/4W	R1368	1-247-791-91	CARBON	22 5% 1/4W
R1263	1-249-441-11	CARBON	100K 5% 1/4W	R1369	1-247-791-91	CARBON	22 5% 1/4W
R1268	1-247-791-91	CARBON	22 5% 1/4W	R1370	1-249-389-11	CARBON	4. 7 5% 1/4W F
R1269	1-247-791-91	CARBON	22 5% 1/4W	R1371	1-249-389-11	CARBON	4. 7 5% 1/4W F
R1270	1-249-389-11	CARBON	4. 7 5% 1/4W F	△R1380	1-215-889-00	METAL OXIDE	330 5% 2W F
R1271	1-249-389-11	CARBON	4. 7 5% 1/4W F	R1398	1-249-385-11	CARBON	2. 2 5% 1/6W F
△R1280	1-215-889-00	METAL OXIDE	330 5% 2W F			(AEP, UK, G, IT, EE)	
R1298	1-249-385-11	CARBON	2. 2 5% 1/6W F	R1399	1-249-385-11	CARBON	2. 2 5% 1/6W F
		(AEP, UK, G, IT, EE)				(AEP, UK, G, IT, EE)	
R1299	1-249-385-11	CARBON	2. 2 5% 1/6W F	R1401	1-249-421-11	CARBON	2. 2K 5% 1/4W
		(AEP, UK, G, IT, EE)		R1402	1-249-429-11	CARBON	10K 5% 1/4W
R1301	1-249-417-11	CARBON	1K 5% 1/4W F	R1403	1-249-441-11	CARBON	100K 5% 1/4W
R1302	1-249-437-11	CARBON	47K 5% 1/4W	R1421	1-249-429-11	CARBON	10K 5% 1/4W F
R1303	1-249-413-11	CARBON	470 5% 1/4W F	R1422	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R1304	1-249-437-11	CARBON	47K 5% 1/4W	R1423	1-249-429-11	CARBON	10K 5% 1/4W
R1305	1-249-425-11	CARBON	4. 7K 5% 1/4W F	R1424	1-249-441-11	CARBON	100K 5% 1/4W
R1306	1-249-425-11	CARBON	4. 7K 5% 1/4W F	R1425	1-247-791-91	CARBON	22 5% 1/4W
R1307	1-249-425-11	CARBON	4. 7K 5% 1/4W F	R1426	1-249-435-11	CARBON	33K 5% 1/4W
R1308	1-249-425-11	CARBON	4. 7K 5% 1/4W F	R1427	1-249-425-11	CARBON	4. 7K 5% 1/4W F
△R1309	1-212-881-11	FUSIBLE	100 5% 1/4W F	R1428	1-249-425-11	CARBON	4. 7K 5% 1/4W F
△R1310	1-208-602-11	WIREWOUND	0. 22 10% 2W F	R1429	1-249-441-11	CARBON	100K 5% 1/4W
R1311	1-249-417-11	CARBON	1K 5% 1/4W F	R1431	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R1312	1-249-431-11	CARBON	15K 5% 1/4W	R1432	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R1313	1-249-441-11	CARBON	100K 5% 1/4W	R1441	1-249-437-11	CARBON	47K 5% 1/4W
R1314	1-249-421-11	CARBON	2. 2K 5% 1/4W F	R1442	1-249-439-11	CARBON	68K 5% 1/4W
R1315	1-249-421-11	CARBON	2. 2K 5% 1/4W F	R1443	1-249-437-11	CARBON	47K 5% 1/4W
R1316	1-249-421-11	CARBON	2. 2K 5% 1/4W F	R1444	1-249-439-11	CARBON	68K 5% 1/4W
R1317	1-249-421-11	CARBON	2. 2K 5% 1/4W F	R1451	1-249-413-11	CARBON	470 5% 1/4W F
R1318	1-247-791-91	CARBON	22 5% 1/4W	R1452	1-249-429-11	CARBON	10K 5% 1/4W
R1319	1-247-791-91	CARBON	22 5% 1/4W	R1453	1-249-429-11	CARBON	10K 5% 1/4W
				R1454	1-249-417-11	CARBON	1K 5% 1/4W F

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

**TC SW**

— 109 —

Ref.No.	Part No.	Description	Remark			Ref.No.	Part No.	Description	Remark		
*	A-4303-513-A	TCB-17 BOARD, COMPLETE (E, AUS, PX, MX, AR)	*****			C68	1-162-306-11	CERAMIC	10000PF	30%	16V
		< CAPACITOR >				C69	1-162-306-11	CERAMIC	10000PF	30%	16V
C1	1-162-294-31	CERAMIC	0.001uF	10%	50V	C70	1-162-306-11	CERAMIC	10000PF	30%	16V
C2	1-126-967-11	ELECT	47uF	20%	16V	C71	1-162-306-11	CERAMIC	10000PF	30%	16V
C3	1-164-159-21	CERAMIC	0.1uF		50V						
C5	1-162-306-11	CERAMIC	10000PF	30%	16V			< FILTER >			
C6	1-162-306-11	CERAMIC	10000PF	30%	16V	C73	1-162-306-11	CERAMIC	10000PF	30%	16V
						C74	1-126-964-11	ELECT	10uF	20%	50V
C7	1-101-004-00	CERAMIC	0.01uF		50V						
C8	1-162-306-11	CERAMIC	10000PF	30%	16V	CF1	1-567-389-11	FILTER, CERAMIC			
C9	1-162-306-11	CERAMIC	10000PF	30%	16V	CF2	1-567-389-11	FILTER, CERAMIC			
C11	1-164-159-21	CERAMIC	0.1uF		50V			< CONNECTOR >			
C12	1-162-198-31	CERAMIC	8.2PF	10%	50V	* CN1	1-568-832-11	SOCKET, CONNECTOR 13P			
								< DIODE >			
C14	1-162-306-11	CERAMIC	10000PF	30%	16V	D1	8-719-933-33	DIODE UZL-6L1-TA			
C21	1-102-959-00	CERAMIC	22PF	5%	50V	D2	8-719-987-63	DIODE 1N4148M-TA			
C22	1-164-159-21	CERAMIC	0.1uF		50V			< FRONTEND >			
C23	1-162-306-11	CERAMIC	10000PF	30%	16V	FE1	1-233-533-11	ENCAPSULATED COMPONENT			
C24	1-126-967-11	ELECT	47uF	20%	16V	FE2	1-239-260-11	ENCAPSULATED COMPONENT			
								< IC >			
C25	1-162-306-11	CERAMIC	10000PF	30%	16V	IC1	8-759-288-54	IC LC72130			
C26	1-126-964-11	ELECT	10uF	20%	50V	IC2	8-759-176-03	IC LA1835			
C27	1-164-159-21	CERAMIC	0.1uF		50V			< IFT >			
C28	1-124-925-11	ELECT	2.2uF	20%	100V	IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)			
C29	1-102-518-11	CERAMIC	33PF	5%	50V			< COIL >			
						L41	1-410-119-11	MICRO INDUCTOR (EL TYPE)			
C30	1-162-294-31	CERAMIC	0.001uF	10%	50V			< TRANSISTOR >			
C31	1-162-306-11	CERAMIC	10000PF	30%	16V	Q1	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4			
C41	1-126-933-11	ELECT	100uF	20%	10V	Q2	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4			
C42	1-162-306-11	CERAMIC	10000PF	30%	16V	Q3	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4			
C43	1-126-962-11	ELECT	3.3uF	20%	50V	Q4	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4			
						Q5	8-729-422-57	TRANSISTOR BN1A4M-TP			
C44	1-162-306-11	CERAMIC	10000PF	30%	16V			< RESISTOR >			
C45	1-124-589-11	ELECT	47uF	20%	16V	R1	1-249-401-11	CARBON 47 5% 1/4W F			
C46	1-162-600-11	CERAMIC	4700PF	30%	16V	R2	1-249-411-11	CARBON 330 5% 1/4W			
C47	1-162-294-31	CERAMIC	0.001uF	10%	50V	R3	1-249-411-11	CARBON 330 5% 1/4W			
C48	1-126-160-11	ELECT	1uF	20%	50V	R5	1-249-411-11	CARBON 330 5% 1/4W			
						R6	1-247-863-91	CARBON 22K 5% 1/4W			
C49	1-136-159-00	METALIZED FILM	0.033uF	5%	50V						
C50	1-136-159-00	METALIZED FILM	0.033uF	5%	50V	R7	1-249-411-11	CARBON 330 5% 1/4W			
C53	1-126-964-11	ELECT	10uF	20%	50V	R8	1-249-411-11	CARBON 330 5% 1/4W			
C54	1-126-157-11	ELECT	10uF	20%	16V	R9	1-247-863-91	CARBON 22K 5% 1/4W			
C55	1-126-964-11	ELECT	10uF	20%	50V	R10	1-249-411-11	CARBON 330 5% 1/4W			
C56	1-126-964-11	ELECT	10uF	20%	50V						
C57	1-164-159-21	CERAMIC	0.1uF		50V F						
C58	1-162-306-11	CERAMIC	10000PF	30%	16V						
C59	1-164-159-21	CERAMIC	0.1uF		50V F						
C61	1-164-159-21	CERAMIC	0.1uF		50V F						
C62	1-126-967-11	ELECT	47uF	20%	16V						
C63	1-164-159-21	CERAMIC	0.1uF		50V F						
C64	1-124-902-00	ELECT	0.47uF	20%	50V						
C65	1-124-903-11	ELECT	1.0uF	20%	50V						
C66	1-124-903-11	ELECT	1.0uF	20%	50V						
C67	1-126-964-11	ELECT	10uF	20%	50V						

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R11	1-247-863-91	CARBON	22K 5% 1/4W	*****			
R12	1-249-411-11	CARBON	330 5% 1/4W	*	A-4303-502-A	TCB-17 BOARD, COMPLETE (AEP, UK)	
R13	1-249-411-11	CARBON	330 5% 1/4W	*****			
R14	1-247-863-91	CARBON	22K 5% 1/4W	*	A-4303-503-A	TCB-17 BOARD, COMPLETE (IT, G)	
R15	1-249-429-11	CARBON	10K 5% 1/4W	*****			
R16	1-249-437-11	CARBON	47K 5% 1/4W				
R19	1-249-399-11	CARBON	33 5% 1/4W F	*	A-4303-504-A	TCB-17 BOARD, COMPLETE (EE)	
R21	1-247-807-31	CARBON	100 5% 1/4W	*****			
R22	1-249-425-11	CARBON	4.7K 5% 1/4W F	< CAPACITOR >			
R23	1-249-425-11	CARBON	4.7K 5% 1/4W F	C1	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
R24	1-249-425-11	CARBON	4.7K 5% 1/4W F	C2	1-126-967-11	ELECT 47uF 20% 16V	
R25	1-247-807-31	CARBON	100 5% 1/4W	C3	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
R26	1-249-411-11	CARBON	330 5% 1/4W	C5	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
R27	1-249-425-11	CARBON	4.7K 5% 1/4W F	C6	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
R28	1-249-423-11	CARBON	3.3K 5% 1/4W F	C7	1-101-004-00	CERAMIC 0.01uF 50V (EE)	
R29	1-249-417-11	CARBON	1K 5% 1/4W F	C8	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
R30	1-249-417-11	CARBON	1K 5% 1/4W F	C9	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
R31	1-249-417-11	CARBON	1K 5% 1/4W F	C10	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
R32	1-249-417-11	CARBON	1K 5% 1/4W F	C16	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
R33	1-247-807-31	CARBON	100 5% 1/4W	C19	1-163-249-11	CERAMIC CHIP 82PF 5% 50V	
R34	1-249-429-11	CARBON	10K 5% 1/4W	(AEP, UK, EE)			
R35	1-249-429-11	CARBON	10K 5% 1/4W	C21	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
R36	1-249-437-11	CARBON	47K 5% 1/4W	C22	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
R37	1-249-417-11	CARBON	1K 5% 1/4W F	C23	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
R41	1-249-429-11	CARBON	10K 5% 1/4W	C24	1-163-239-11	CERAMIC CHIP 33PF 5% 50V	
R43	1-249-421-11	CARBON	2.2K 5% 1/4W	C26	1-126-967-11	ELECT 47uF 20% 16V	
R44	1-249-421-11	CARBON	2.2K 5% 1/4W	C28	1-126-967-11	ELECT 47uF 20% 16V	
R46	1-249-442-11	CARBON	510 5% 1/4W	C29	1-162-306-11	CERAMIC 0.01uF 30% 16V	
R47	1-249-403-11	CARBON	68 5% 1/4W F	C30	1-124-925-11	ELECT 2.2uF 20% 100V	
R48	1-249-423-11	CARBON	3.3K 5% 1/4W F	C31	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
R49	1-249-393-11	CARBON	10 5% 1/4W F	C32	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
R50	1-249-429-11	CARBON	10K 5% 1/4W	C33	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
R51	1-249-441-11	CARBON	100K 5% 1/4W	C34	1-163-091-00	CERAMIC CHIP 8PF 50V (G, IT)	
R52	1-249-429-11	CARBON	10K 5% 1/4W	C34	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
R53	1-249-425-11	CARBON	4.7K 5% 1/4W F	(AEP, UK, EE)			
R54	1-249-425-11	CARBON	4.7K 5% 1/4W F	C35	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
< VARIABLE RESISTOR >				C36	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
RV41	1-238-600-11	RES, ADJ, CARBON 10K		C37	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
RV42	1-238-601-11	RES, ADJ, CARBON 22K		C39	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
< TERMINAL >				C40	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
TM1	1-537-238-21	TERMINAL BOARD (ANTENNA)		C41	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
< VIBRATOR >				C42	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)		C43	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
X41	1-577-075-11	OSCILLATOR, CERAMIC (456KHz)		C44	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
X42	1-760-220-11	FILTER, CERAMIC (10.7MHz)		C45	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
X43	1-527-981-00	FILTER, CERAMIC (450KHz)		C46	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	
				C47	1-126-967-11	ELECT 47uF 20% 16V	
				C48	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
				C49	1-124-902-00	ELECT 0.47uF 20% 50V	



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C50	1-124-903-11	ELECT	1.0uF 20% 50V			< IFT >	
C51	1-124-903-11	ELECT	1.0uF 20% 50V	IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)	
C52	1-126-964-11	ELECT	10uF 20% 50V			< JUMPER RESISTOR >	
C53	1-126-964-11	ELECT	10uF 20% 50V	JR1	1-216-295-11	METAL CHIP 0 5% 1/10W (G, IT)	
C54	1-126-157-11	ELECT	10uF 20% 16V	JR2	1-216-295-11	METAL CHIP 0 5% 1/10W (AEP, UK, EE)	
C55	1-126-157-11	ELECT	10uF 20% 16V	JR3	1-216-295-11	METAL CHIP 0 5% 1/10W (G, IT)	
C56	1-126-157-11	ELECT	10uF 20% 16V	JR6	1-216-295-11	METAL CHIP 0 5% 1/10W (AEP, UK, G, IT)	
C57	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	JR7	1-216-295-11	METAL CHIP 0 5% 1/10W (G, IT)	
C58	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	JR8	1-216-295-11	METAL CHIP 0 5% 1/10W (AEP, UK, EE)	
C59	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V (EE)	JR9	1-216-295-11	METAL CHIP 0 5% 1/10W (AEP, UK, EE)	
C60	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V (EE)	JR45	1-216-295-11	METAL CHIP 0 5% 1/10W	
C61	1-126-301-11	ELECT	1uF 20% 50V	JR46	1-216-296-11	METAL CHIP 0 5% 1/8W	
C62	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V	JR47	1-216-295-11	METAL CHIP 0 5% 1/10W	
C63	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V (AEP, UK, G, IT)	JR48	1-216-295-11	METAL CHIP 0 5% 1/10W	
C64	1-126-967-11	ELECT	47uF 20% 16V	JR49	1-216-296-11	METAL CHIP 0 5% 1/8W	
C65	1-163-031-11	CERAMIC CHIP	0.01uF 50V	JR51	1-216-295-11	METAL CHIP 0 5% 1/10W	
C66	1-126-162-11	ELECT	3.3uF 20% 50V	JR52	1-216-295-11	METAL CHIP 0 5% 1/10W	
C67	1-126-933-11	ELECT	100uF 20% 10V	JR53	1-216-296-11	METAL CHIP 0 5% 1/8W	
C68	1-162-306-11	CERAMIC	0.01uF 30% 16V	JR54	1-216-295-11	METAL CHIP 0 5% 1/10W	
C71	1-162-306-11	CERAMIC	0.01uF 30% 16V			< JUMPER RESISTOR >	
C72	1-126-967-11	ELECT	47uF 20% 16V	JW4	1-249-413-11	CARBON 470 5% 1/4W (AEP, UK, G, IT)	
C120	1-163-105-00	CERAMIC CHIP	33PF 5% 50V (AEP, UK, EE)	JW5	1-249-413-11	CARBON 470 5% 1/4W (AEP, UK, G, IT)	
		< FILTER >				< COIL >	
CF1	1-567-389-11	FILTER, CERAMIC (EE)		L2	1-414-142-11	MICRO INDUCTOR 1uH (AEP, UK, G, IT)	
CF1	1-579-374-71	FILTER, CERAMIC (AEP, UK, G, IT)		L3	1-410-521-11	MICRO INDUCTOR 100uH	
CF2	1-760-393-11	FILTER, CERAMIC (AEP, UK, G, IT)		L4	1-410-515-11	INDUCTOR 33uH (AEP, UK, G, IT)	
CF3	1-567-389-11	FILTER, CERAMIC (EE)		L41	1-407-500-00	MICRO INDUCTOR 4.7mH (AEP, UK, EE)	
CF3	1-760-393-11	FILTER, CERAMIC (AEP, UK, G, IT)		L41	1-410-119-11	MICRO INDUCTOR (EL TYPE) 1mH (G, IT)	
		< CONNECTOR >				< FILTER >	
* CN1	1-568-834-11	SOCKET, CONNECTOR 15P		LPF41	1-239-845-11	FILTER, LOW PASS	
		< DIODE >		LPF42	1-239-845-11	FILTER, LOW PASS	
D21	8-719-976-XX	DIODE UDZ-TE-17-5.1B				< TRANSISTOR >	
D41	8-719-016-74	DIODE 1SS352-TPH3		Q1	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
		< FRONTEND >		Q2	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
FE1	1-233-542-11	FRONT END (4 GANG) (AEP, UK, G, IT)		Q3	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
FE1	1-693-335-11	FRONT END (3 GANG) (EE)		Q4	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
FE2	1-233-514-11	ENCAPSULATED COMPONENT (AEP, UK, EE)		Q5	8-729-422-57	TRANSISTOR MUN2111	
FE2	1-239-260-11	ENCAPSULATED COMPONENT (G, IT)					
		< IC >		Q9	8-729-216-22	TRANSISTOR 2SA812-M5M6 (AEP, UK, EE)	
IC21	8-759-288-54	IC LC72130		Q11	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	
IC41	8-759-176-03	IC LA1835		Q12	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	
				Q13	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	
				Q14	8-729-900-80	TRANSISTOR DTC114ES (AEP, UK, EE)	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< RESISTOR >				< VARIABLE RESISTOR >			
R1	1-249-401-11	CARBON	47 5% 1/4W F	RV41	1-238-601-11	RES, ADJ, CARBON 22K	
R2	1-216-037-00	METAL CHIP	330 5% 1/10W	RV42	1-238-600-11	RES, ADJ, CARBON 10K	
R3	1-216-037-00	METAL CHIP	330 5% 1/10W	< TERMINAL >			
R5	1-216-037-00	METAL CHIP	330 5% 1/10W				
R6	1-216-081-00	METAL CHIP	22K 5% 1/10W	TM1	1-537-488-11	TERMINAL BOARD (ANT) (ANTENNA)	
R7	1-216-037-00	METAL CHIP	330 5% 1/10W	< VIBRATOR >			
R8	1-216-037-00	METAL CHIP	330 5% 1/10W				
R9	1-216-081-00	METAL CHIP	22K 5% 1/10W	X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)	
R10	1-216-037-00	METAL CHIP	330 5% 1/10W	X41	1-760-220-11	FILTER, CERAMIC (10.7MHz)	
R11	1-216-081-00	METAL CHIP	22K 5% 1/10W	X42	1-527-981-00	FILTER, CERAMIC (450KHz)	
R12	1-216-037-00	METAL CHIP	330 5% 1/10W	X43	1-577-075-11	OSCILLATOR, CERAMIC (456KHz)	
R13	1-216-037-00	METAL CHIP	330 5% 1/10W	*****			
R14	1-216-081-00	METAL CHIP	22K 5% 1/10W	*	1-659-218-11	TRANS BOARD	
R18	1-216-073-00	METAL CHIP	10K 5% 1/10W (AEP, UK, EE)	*****			
R19	1-216-073-00	METAL CHIP	10K 5% 1/10W (AEP, UK, EE)	< CAPACITOR >			
R21	1-216-049-11	METAL CHIP	1.0K 5% 1/10W				
R22	1-216-049-11	METAL CHIP	1.0K 5% 1/10W	CV600	1-164-159-21	CERAMIC 0.1uF 50V	
R23	1-216-049-11	METAL CHIP	1.0K 5% 1/10W	< CONNECTOR >			
R24	1-216-025-11	METAL CHIP	100 5% 1/10W				
R25	1-249-417-11	CARBON	1K 5% 1/4W F	* CN1601	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P (AUS, MX)	
R26	1-249-437-11	CARBON	47K 5% 1/4W	CN1601	1-774-108-11	PIN, CONNECTOR (PC BOARD)	
R27	1-249-429-11	CARBON	10K 5% 1/4W	(AEP, UK, G, IT, EE, E, PX, AR)			
R28	1-249-417-11	CARBON	1K 5% 1/4W F	CN1604	1-564-524-11	PLUG, CONNECTOR 9P	
R29	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	< FUSE >			
R30	1-216-186-00	METAL CHIP	330 5% 1/8W				
R31	1-216-025-11	METAL CHIP	100 5% 1/10W	△F1603	1-532-350-00	FUSE (T4A 250V) (E, PX, MX, AR)	
R32	1-249-425-11	CARBON	4.7K 5% 1/4W F	△F1604	1-532-259-00	FUSE (T1.6A 250V)	
R33	1-249-425-11	CARBON	4.7K 5% 1/4W F	(AEP, UK, G, IT, EE, E, AUS, PX, AR)			
R34	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	< FUSE HOLDER >			
R35	1-216-214-00	METAL CHIP	4.7K 5% 1/8W				
R36	1-216-025-11	METAL CHIP	100 5% 1/10W	FH1601	1-533-217-31	HOLDER, FUSE (E, PX, AR)	
R37	1-216-073-00	METAL CHIP	10K 5% 1/10W	FH1602	1-533-217-31	HOLDER, FUSE (E, PX, AR)	
R38	1-216-089-11	METAL CHIP	47K 5% 1/10W	FH1603	1-533-217-31	HOLDER, FUSE	
R39	1-249-429-11	CARBON	10K 5% 1/4W	FH1604	1-533-217-31	HOLDER, FUSE	
R42	1-216-073-00	METAL CHIP	10K 5% 1/10W	< RESISTOR >			
R43	1-216-042-00	METAL CHIP	510 5% 1/10W				
R44	1-216-021-00	METAL CHIP	68 5% 1/10W	△R1601	1-219-139-11	FUSIBLE 0.68 5% 1/4W F	
R45	1-249-423-11	CARBON	3.3K 5% 1/4W F	△R1602	1-219-136-11	FUSIBLE 0.22 5% 1/4W F	
R46	1-216-073-00	METAL CHIP	10K 5% 1/10W	△R1603	1-219-136-11	FUSIBLE 0.22 5% 1/4W F	
R47	1-216-097-11	METAL CHIP	100K 5% 1/10W	< TRANSFORMER >			
R48	1-249-417-11	CARBON	1K 5% 1/4W F				
R49	1-216-049-11	METAL CHIP	1.0K 5% 1/10W	△T1001	1-429-343-11	TRANSFORMER, POWER (AEP, UK, G, IT, EE)	
R50	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	△T1001	1-429-345-11	TRANSFORMER, POWER (E, AUS, PX, MX, AR)	
R51	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	< SWITCH >			
R53	1-249-429-11	CARBON	10K 5% 1/4W				
R55	1-216-162-00	METAL CHIP	33 5% 1/8W	△VS1601	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE	
R56	1-249-393-11	CARBON	10 5% 1/4W F	(VOLTAGE SELECTOR) (E, PX, AR)			
R91	1-216-295-11	METAL CHIP	0 5% 1/10W (AEP, UK, EE)				
R92	1-216-073-00	METAL CHIP	10K 5% 1/10W (AEP, UK, EE)				

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*****							
		MISCELLANEOUS		3-810-803-11		MANUAL, INSTRUCTION	
		*****				(ENGLISH, FRENCH, SPANISH, CHINESE) (E, AUS, PX, AR)	
154	1-769-977-11	WIRE (FLAT TYPE) (13 CORE) (E, AUS, PX, MX, AR)		3-810-803-21		MANUAL, INSTRUCTION (SPANISH) (MX)	
154	1-773-009-11	WIRE (FLAT TYPE) (15 CORE) (AEP, UK, G, IT, EE)		4-979-306-01		INDIVIDUAL CARTON (AUS, PX)	
155	1-765-325-11	WIRE (FLAT TYPE) (11 CORE)		4-979-307-01		INDIVIDUAL CARTON (E, MX, AR)	
156	1-776-265-11	WIRE (FLAT TYPE)		4-979-309-01		INDIVIDUAL CARTON (AEP, UK, G, IT, EE)	
157	1-765-338-11	WIRE (FLAT TYPE) (21 CORE)					
				4-979-371-01		COVER, BATTERY (for RM-SD50)	
158	1-773-119-11	WIRE (FLAT TYPE) (19 CORE) (AEP, UK, G, IT, EE)		*	4-979-431-01	CUSHION (BOTTOM)	
158	1-773-154-11	WIRE (FLAT TYPE) (21 CORE) (E, AUS, PX, MX, AR)		*	4-980-140-01	CUSHION (UPPER)	
△160	1-569-007-11	ADAPTER, CONVERSION 2P (PX)		*	4-981-440-01	LABEL (PTT) (IT)	
* 357	1-452-538-11	MAGNET			8-917-537-90	REMOCON RM-SD50	
△401	8-848-387-01	OPTICAL PICK-UP KSS-213BA/S-N		*****			
						*****	
402	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)				HARDWARE LIST	
△CNP16011-558-943-41		CORD, POWER (E, PX, MX)				*****	
△CNP16011-575-651-21		CORD, POWER (AEP, G, IT, EE, AR)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
△CNP16011-696-845-11		CORD, POWER (AUS)		#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
△CNP16011-751-529-11		CORD, POWER (UK)		#3	7-685-871-01	SCREW +BVTT 3X6 (S)	
				#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
△F1603	1-532-350-00	FUSE (T4A, 250V) (E, PX, MX, AR)		#5	7-621-770-67	SCREW +BVTT 2.6X6 (S)	
△F1604	1-532-259-00	FUSE (T1.6A, 250V)					
		(AEP, UK, E, AUS, PX, G, IT, EE, AR)		#6	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
FL501	1-517-490-21	INDICATOR TUBU, FLUORESCENT		#7	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK)		#8	7-621-775-10	SCREW +B 2.6X4	
HRPE1011-500-094-11		HEAD, MAGNETIC (REC/PB/ERASE)		#9	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
				#10	7-623-921-01	RING, RETAINING, CAPSTAN	
M1	X-2004-409-1	MOTOR ASSY (CAPSTAN)					
M2	X-2004-410-1	MOTOR ASSY (TRIGGER)		#11	7-621-775-00	SCREW +B 2.6X3	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)		#12	7-621-255-15	SCREW +P 2X3	
M102	X-4917-504-1	MOTOR ASSY (SLED)					
M201	A-4660-977-A	MOTOR ASSY (TABLE)					
S101	1-572-085-11	SWITCH, LEAF (LIMIT)					
△T1001	1-429-343-11	TRANSFORMER, POWER (AEP, UK, G, IT, EE)					
△T1001	1-429-345-11	TRANSFORMER, POWER (E, AUS, PX, MX, AR)					
*****							
		ACCESSORIES & PACKING MATERIALS					
		*****					
1-501-374-11		ANTENNA, LOOP					
1-501-659-41		ANTENNA (FM) (E, AUS, PX, MX, AR)					
1-501-804-11		ANTENNA (FM) (AEP, UK, IT, EE)					
3-810-802-11		MANUAL, INSTRUCTION (ENGLISH) (UK)					
3-810-802-21		MANUAL, INSTRUCTION					
		(ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)					
3-810-802-31		MANUAL, INSTRUCTION					
		(GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, IT)					
3-810-802-51		MANUAL, INSTRUCTION (GERMAN) (G)					
3-810-802-61		MANUAL, INSTRUCTION					
		(ENGLISH, POLISH, RUSSIAN) (EE)					

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

# HCD-N455

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**SONY**

## **SERVICE MANUAL**

*AEP Model*  
*UK Model*  
*E Model*  
*Australian Model*  
*PX Model*

### **SUPPLEMENT-1**

File this supplement with the service manual.

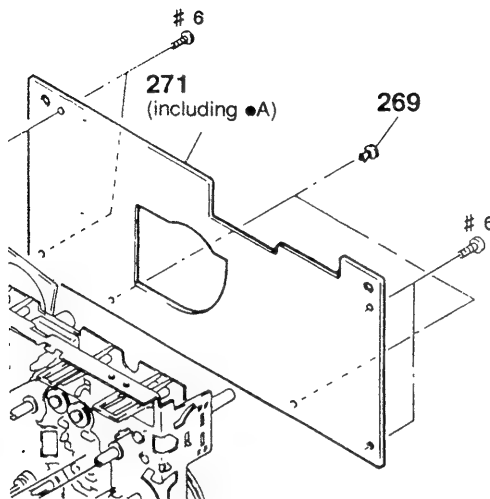
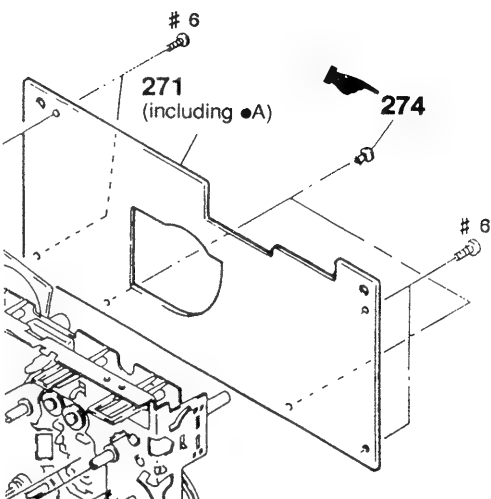
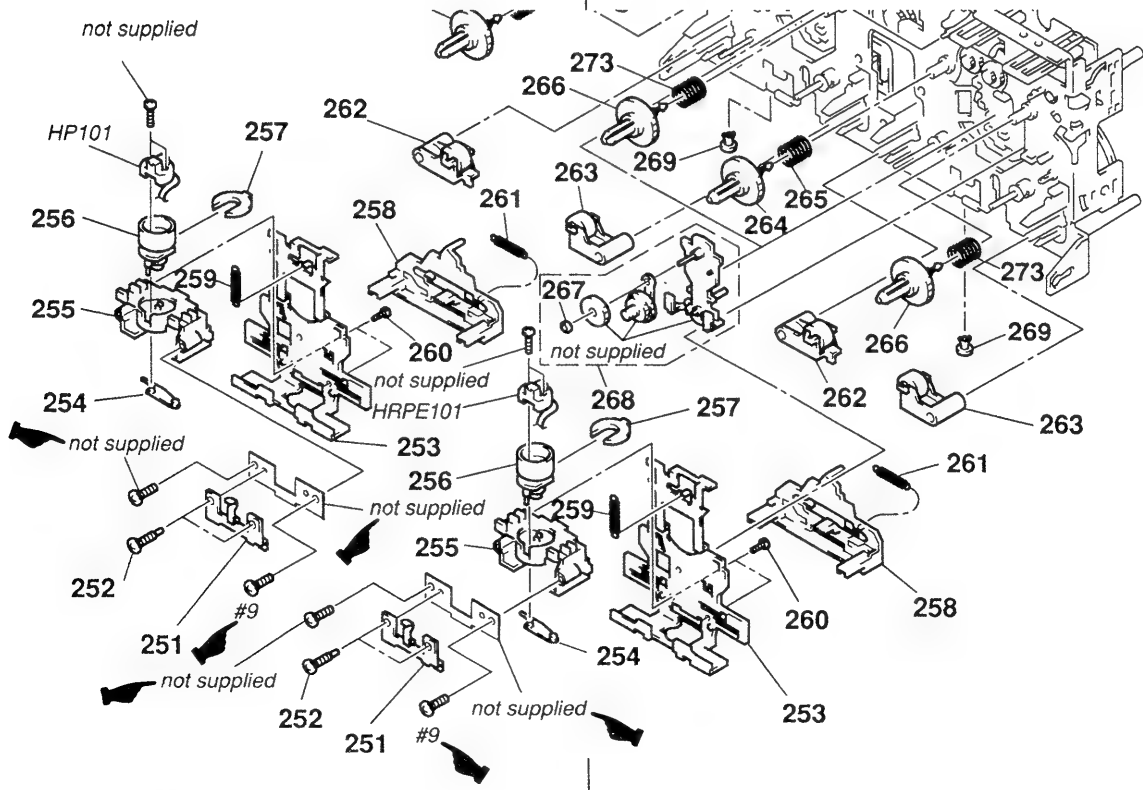
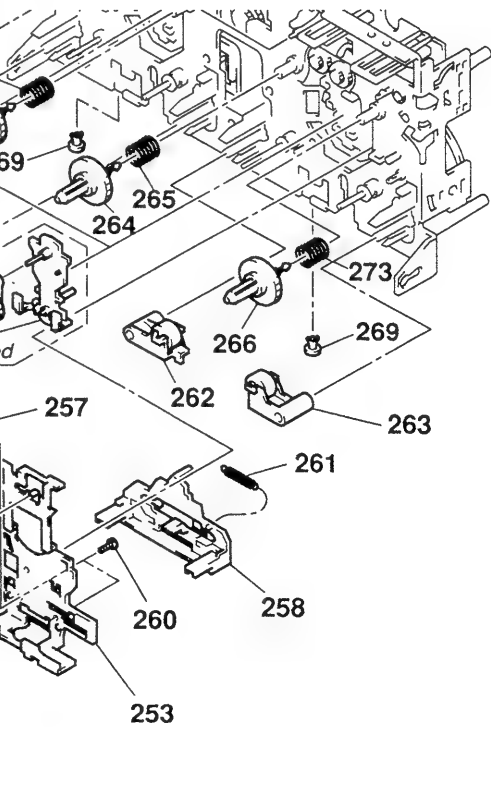
**Subject : 1. CORRECTION**  
**2. SERVICING NOTE ADDITION**  
**3. PARTS CHANGED**  
**4. BOARD CHANGED**




(ECN-TA600653)

# 1. CORRECTION

- Correct your service manual as shown below.

✖ : indicates corrected portion.

Page	INCORRECT				CORRECT			
88	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
			*** EXPLODED VIEWS ***				*** EXPLODED VIEWS ***	
								
								
89	319	3-914-111-01	SPRING (FR), TORSION		319	3-911-114-01	SPRING (FR), TORSION	

Page	INCORRECT								CORRECT								
96	Ref. No.	Part No.	Description				Remark		Ref. No.	Part No.	Description				Remark		
	*** ELECTRICAL PARTS LIST ***								*** ELECTRICAL PARTS LIST ***								
	*** MAIN BOARD ***								*** MAIN BOARD ***								
	C805	1-124-252-00	ELECT	0.33uF	20%	50V	(E,AUS,PX,MX,AR)										
	C855	1-124-252-00	ELECT	0.33uF	20%	50V	(E,AUS,PX,MX,AR)										
100	R740	1-249-425-11	CARBON	4.7K	5%	1/4W	F		R740	1-247-843-11	CARBON	3.3K	5%	1/4W	F		
						(E,MX,AR)								(E,MX,AR)			
	R741	1-249-427-11	CARBON	6.8K	5%	1/4W	F		R741	1-249-423-11	CARBON	10K	5%	1/4W	F		
						(E,MX,AR,EE)								(E,MX,AR)			
									R741	1-249-427-11	CARBON	6.8K	5%	1/4W	F		
														(EE)			
101									R903	1-249-437-11	CARBON	47K	5%	1/4W			
106	A-4389-210-A	POWER AMP BOARD, COMPLETE							* 	A-4389-210-A	POWER AMP BOARD, COMPLETE						
						(AEP,UK,G,IT,EE)								(AEP,UK,G,IT,EE)			
	A-4389-212-A	POWER AMP BOARD, COMPLETE							* 	A-4389-212-A	POWER AMP BOARD, COMPLETE						
						(E,AUS,PX,MX,AR)								(E,AUS,PX,MX,AR)			
	1-537-770-21	TERMINAL BOARD, GROUND							* 	1-537-738-21	TERMINAL, EARTH						
	C1348	1-136-495-11	FILM	0.068uF	5%	50V											
						(AEP,UK,G,IT,EE)											
	C1349	1-136-495-11	FILM	0.068uF	5%	50V											
						(AEP,UK,G,IT,EE)											
	C1398	1-136-495-11	FILM	0.068uF	5%	50V											
						(AEP,UK,G,IT,EE)											
	C1399	1-136-495-11	FILM	0.068uF	5%	50V											
						(AEP,UK,G,IT,EE)											
	C1492	1-136-157-00	FILM	0.022uF	5%	50V											
						(AEP,UK,G,IT,EE)											

• Abbreviation

G : German model  
IT : Italian model  
EE : East European model  
MX : Mexican model  
AUS : Australian model  
AR : Argentine model

## ELECTRICAL ADJUSTMENTS CORRECTION

• Correct your service manual as shown below.

✂ : indicates corrected portion.

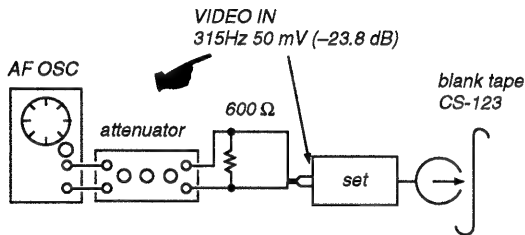
### DECK SECTION

Record Bias Adjustment **DECK B** — Page 12 —

Record Level Adjustment **DECK B** — Page 12 —

#### Procedure:

1. Set function to VIDEO.
2. Mode : record



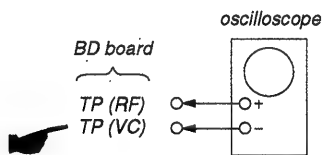
### CD SECTION

— Page 14 —

#### Note:

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

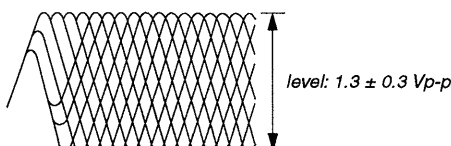
#### Focus Bias Adjustment



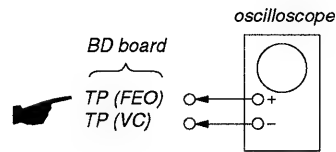
#### Procedure:

1. Connect oscilloscope to test point TP (RF).
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Adjust RV101 so that the waveform is clear.  
(Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

- RF signal  
VOLT/DIV: 200 mV  
TIME/DIV: 500 nS



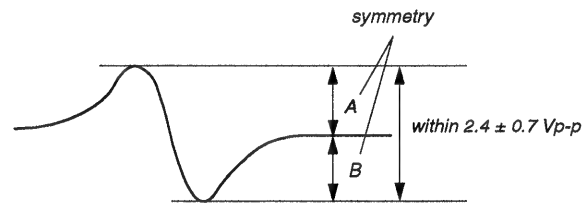
### S Curve Check



#### Procedure :

1. Connect oscilloscope to test point TP (FEO).
2. Connect between test point TP (FOK) and Ground by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within  $2.4 \pm 0.7$  Vp-p.

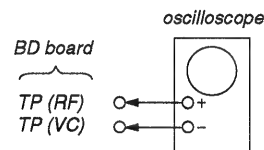
#### S-curve waveform



6. After check, remove the lead wire connected in step 2.

**Note:** • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.  
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

### RF Level Check

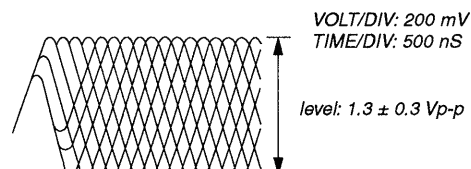


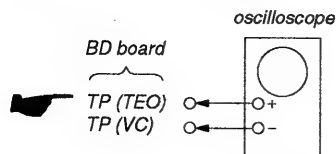
#### Procedure :

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

**Note:** Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.

#### RF signal waveform

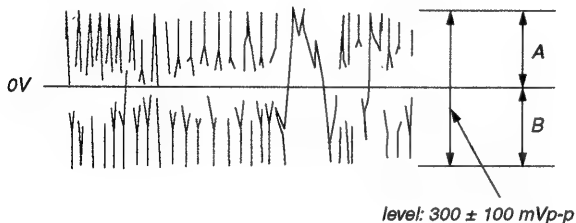




**Procedure:**

1. Connect test point TP703 (ADJ2) on Main board to Ground with a lead wire.
2. Connect oscilloscope to test point TP (TEO).
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

*Traverse waveform*



Specified level: •  $\frac{A - B}{2 (A + B)} \times 100 = \text{less than } \pm 7\%$

•  $A + B = 300 \pm 100 \text{ mVp-p}$

6. Remove the lead wire connected in step 1.

**Focus/Tracking Gain Adjustment (RV102, RV103)**

This gain has a margin, so even if it is slightly off.

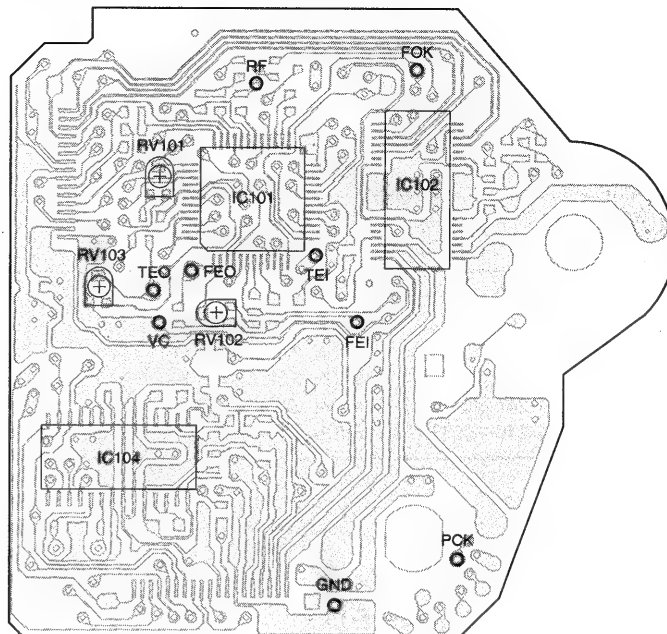
There is no problem.

Therefore, do not perform this adjustment.

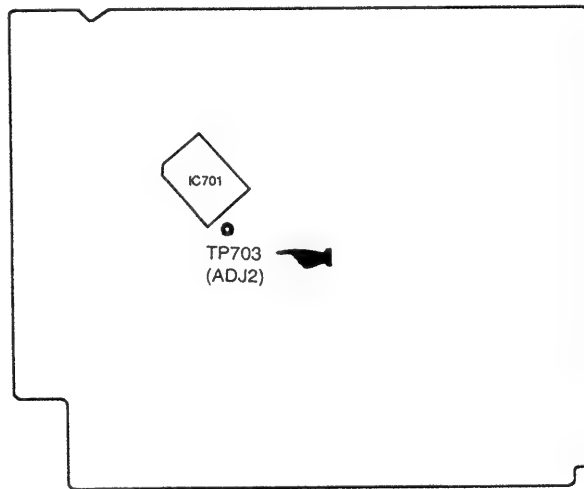
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

**Adjustment Location:**

**[BD BOARD] — Component Side —**



**[MAIN BOARD] — Conductor Side —**





## 2. SERVICING NOTE ADDITION

### How to reset all

Pressing the **TUNER/BAND**, **DISPLAY/DEMO** and **FILE 3** buttons simultaneously, all are reset and returned to as when the unit was shipped.

### Note for replacement of microprocessor (IC701)

R740 and R741 on the Main board for changing destination differ the fixed numbers in comparison with new and former microprocessors (IC701).

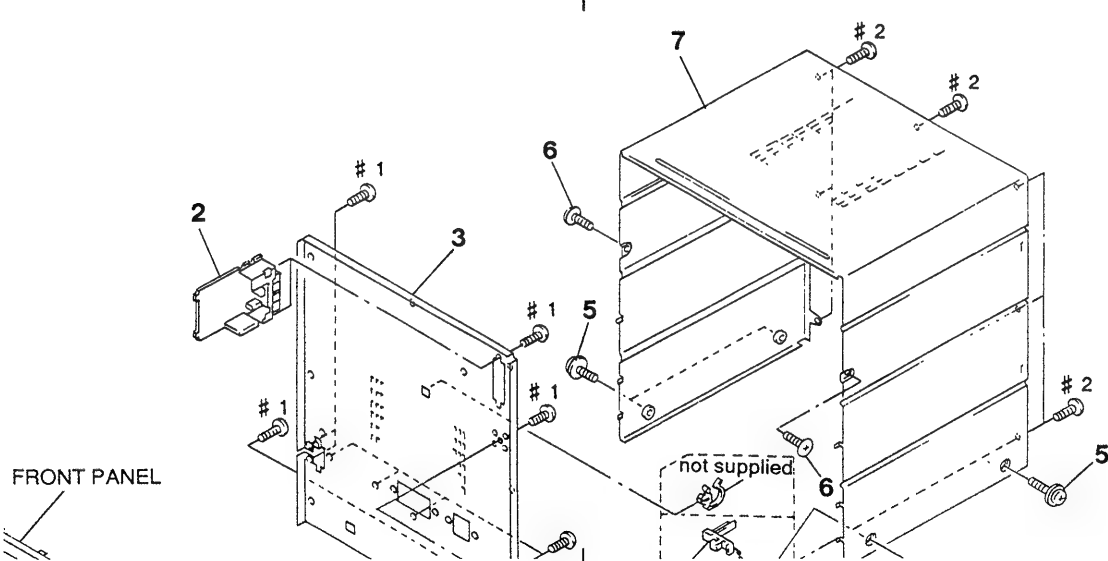
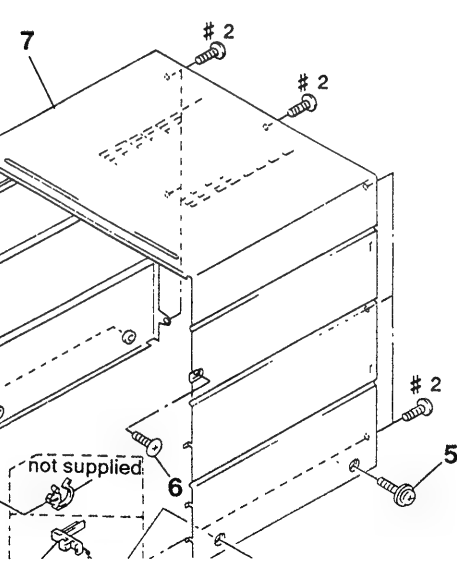
FORMER TYPE : Set for use TMP87CS64YF-6361 to IC701 on the MAIN board.			NEW TYPE : Set for use TMP87CS64YF-6417 to IC701 on the MAIN board.		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
IC701	8-759-375-44	IC TMP87CS64YF-6361	IC701	8-759-398-86	IC TMP87CS64YF-6417
R740	1-247-863-91	CARBON 22K (AUS,PX)	R740	1-247-843-11	CARBON 3.3K (AUS,PX)
R740	1-247-843-11	CARBON 3.3K (E,MX,AR)	R740	1-249-425-11	CARBON 4.7K (E,MX,AR)
R741	1-247-863-91	CARBON 22K (AUS,PX)	R741	1-249-429-11	CARBON 10K (AUS,PX)
R741	1-249-423-11	CARBON 10K (E,MX,AR)	R741	1-249-427-11	CARBON 6.8K (E,MX,AR)

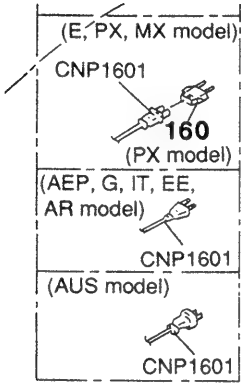
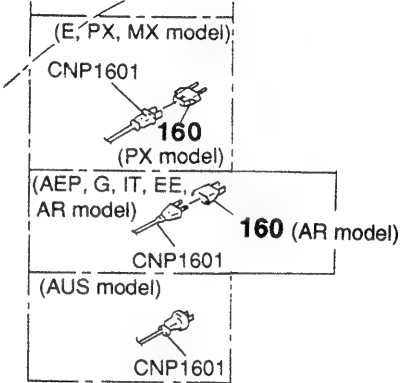
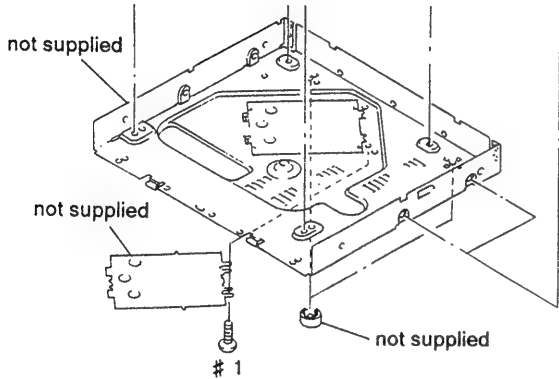
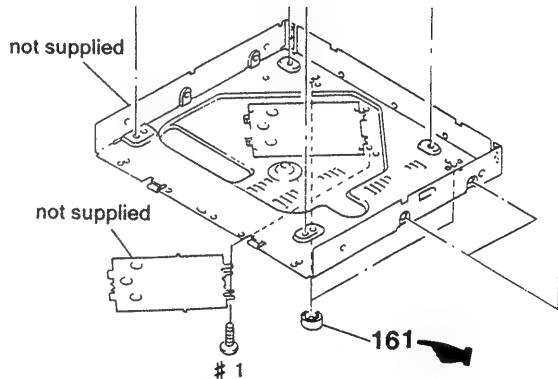
## 3. PARTS CHANGED

 : indicates changed portion.

### • Abbreviation

G	: German model	MX	: Mexican model
IT	: Italian model	AUS	: Australian model
EE	: East European model	AR	: Argentine model

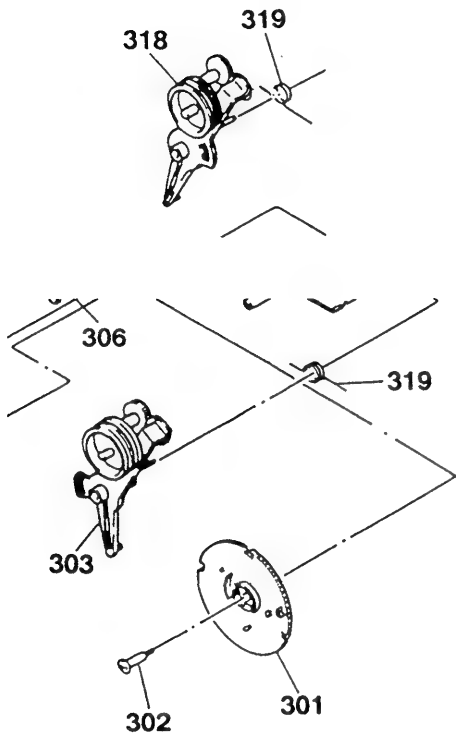
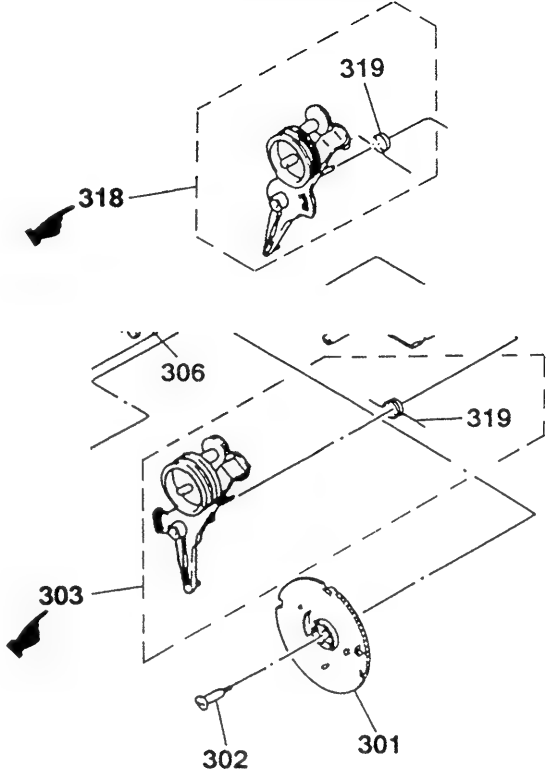
Page	FORMER				NEW			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
83	*** EXPLODED VIEWS ***				*** EXPLODED VIEWS ***			
								
84	* 60	A-4389-163-A	PANEL BOARD, COMPLETE (AEP,UK,G,IT,EE)		* 60	A-4389-163-A	PANEL BOARD, COMPLETE (AEP,UK,G,IT)	
					* 60	A-4389-753-A	PANEL BOARD, COMPLETE (EE)	
85	108	4-978-115-11	PANEL FRONT (AEP,UK,G,IT,EE)		108	4-978-115-11	PANEL FRONT (AEP,UK,G,IT)	
	126	4-978-120-01	BUTTON (TUNING)(E,AUS,PX,MX,AR)		108	4-978-115-61	PANEL FRONT (EE)	
	126	4-978-120-11	BUTTON (TUNING)(AEP,UK,G,IT,EE)		126	4-978-120-01	BUTTON (TUNING)(E,EE,AUS,PX,MX,AR)	
					126	4-978-120-11	BUTTON (TUNING)(AEP,UK,G,IT)	

Page	FORMER				NEW			
86	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
	* 159	A-4378-954-A	MAIN BOARD, COMPLETE (AEP,UK,G,IT)		* 159	A-4378-954-A	MAIN BOARD, COMPLETE (AEP,UK)	
	* 159	A-4378-962-A	MAIN BOARD, COMPLETE (E,AUS,PX,MX,AR)		* 159	A-4390-414-A	MAIN BOARD, COMPLETE (G,IT)	
					* 159	A-4378-962-A	MAIN BOARD, COMPLETE (E,MX,AR)	
					* 159	A-4390-412-A	MAIN BOARD, COMPLETE (AUS,PX)	
	△ F1603	1-532-350-00	FUSE (T4A,250V)(E,PX,MX,AR)		△ 160	1-569-008-11	ADAPTOR,CONVERSION 2P	
	△ F1604	1-532-259-00	FUSE(T1.6A,250V) (AEP,UK,E,AUS,PX,G,IT,EE,AR)		161	X-4941-228-1	FOOT (F22125H-M)	
					△ F1603	1-532-465-31	FUSE TIME LAG (4A,250V)(E,PX,MX,AR)	
					△ F1604	1-532-503-31	FUSE TIME LAG (1.6A,250V) (AEP,UK,E,AUS,PX,G,IT,EE,AR)	
								
								
88	* 253	X-3367-584-2	SLIDER (HEAD) ASSY		* 253	X-3370-844-2	SLIDER (HEAD) ASSY	
	262	X-3370-643-1	PINCH LEVER (REV) ASSY		262	X-3369-909-1	PINCH LEVER (REV) ASSY	
	263	X-3367-588-1	PINCH LEVER (FWD) ASSY		263	X-3369-908-1	PINCH LEVER (FWD) ASSY	
	269	3-911-116-21	RIVET, PUSH		269	3-939-862-01	CLIP	
	274	3-911-116-11	RIVET, PUSH		270	3-938-863-01	STOPPER	

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The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Page	FORMER				NEW			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
89	303	X-3367-590-2	ARM (A) ASSY, FR		303	X-3372-930-1	ARM (A) ASSY, FR	
	318	X-3369-849-2	ARM (B) ASSY, FR		318	X-3372-931-1	ARM (B) ASSY, FR	
								
114	<p>*** MISCELLANEOUS ***</p> <p>△ F1603 1-532-350-00 FUSE (T4A,250V)(E,PX,MX,AR)</p> <p>△ F1604 1-532-259-00 FUSE (T1.6A,250V)</p> <p>(AEP,UK,E,AUS,PX,G,IT,EE,AR)</p> <p>*** ACCESSORIES &amp; PACKING MATERIALS ***</p> <p>4-979-306-01 INDIVIDUAL CARTON (AUS,PX)</p> <p>4-981-440-01 LABEL (PTT)(IT)</p>				<p>*** MISCELLANEOUS ***</p> <p>△ 160 1-569-008-11 ADAPTOR, CONVERSION 2P</p> <p>161 X-4941-228-1 FOOT (F22125H-M)</p> <p>△ F1603 1-532-465-31 FUSE TIME LAG (4A,250V)(E,PX,MX,AR)</p> <p>△ F1604 1-532-503-31 FUSE TIME LAG (1.6A,250V)</p> <p>(AEP,UK,E,AUS,PX,G,IT,EE,AR)</p> <p>*** ACCESSORIES &amp; PACKING MATERIALS ***</p> <p>* 4-979-306-01 INDIVIDUAL CARTON (AUS,PX)</p>			

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Page	FORMER						NEW							
	Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
93	*** ELECTRICAL PARTS LIST ***							*** ELECTRICAL PARTS LIST ***						
	*** CD (L) BOARD ***							*** CD (L) BOARD ***						
	R682	1-249-407-11	CARBON	150	5%	1/4W			JUMPER					
	R683	1-249-407-11	CARBON	150	5%	1/4W			JUMPER					
	R684	1-249-407-11	CARBON	150	5%	1/4W			JUMPER					
94	*** CD (R) BOARD ***							*** CD (R) BOARD ***						
	R675	1-247-807-31	CARBON	100	5%	1/4W			JUMPER					
	R676	1-249-407-11	CARBON	150	5%	1/4W			JUMPER					
	*** CD MOTOR BOARD ***							*** CD MOTOR BOARD ***						
	C202	1-162-306-11	CERAMIC	0.01uF	30%	16V		C202	1-164-159-21	CERAMIC	0.1uF		50V	
95	*** DOOR SW BOARD ***							*** DOOR SW BOARD ***						
	* CN519	1-568-940-11	PIN, CONNECTOR 2P					CN519	1-506-481-11	PIN, CONNECTOR 2P				
	*** HP BOARD ***							*** HP BOARD ***						
	C621	1-164-159-21	CERAMIC	0.1uF		50V (AEP,UK,G,IT,EE)		C621	1-162-294-31	CERAMIC	0.001uF	10%	50V (AEP,UK,G,IT,EE)	
	C622	1-164-159-21	CERAMIC	0.1uF		50V (AEP,UK,G,IT,EE)		C622	1-162-294-31	CERAMIC	0.001uF	10%	50V (AEP,UK,G,IT,EE)	
	*	A-4378-954-A MAIN BOARD, COMPLETE (AEP,UK,G,IT)						*	A-4378-954-A MAIN BOARD, COMPLETE (AEP,UK)					
	*	A-4378-962-A MAIN BOARD, COMPLETE (E,AUS,PX,MX,AR)						*	A-4390-414-A MAIN BOARD, COMPLETE (G,IT)					
								*	A-4378-962-A MAIN BOARD, COMPLETE (E,MX,AR)					
								*	A-4390-412-A MAIN BOARD, COMPLETE (AUS,PX)					
		C202	1-162-600-11	CERAMIC	0.0047uF	20%	16V		C202	1-162-303-11	CERAMIC	0.0033uF	20%	16V
	C212	1-162-600-11	CERAMIC	0.0047uF	20%	16V		C212	1-162-303-11	CERAMIC	0.0033uF	20%	16V	
96	C306	1-124-902-00	ELECT	0.47uF	20%	50V								
	C356	1-124-902-00	ELECT	0.47uF	20%	50V								
	C405	1-126-935-11	ELECT	470uF	20%	16V (AEP,UK,G,IT,EE)		C405	1-126-952-11	ELECT	1000uF	20%	16V	
	C707	1-162-206-31	CERAMIC	20PF	5%	50V		C707	1-162-205-31	CERAMIC	18PF	5%	50V	
	C708	1-162-206-31	CERAMIC	20PF	5%	50V		C708	1-162-205-31	CERAMIC	18PF	5%	50V	
	C805	1-124-925-11	ELECT	2.2uF	20%	100V		C805	1-126-162-11	ELECT	3.3uF	20%	50V	
	C855	1-124-925-11	ELECT	2.2uF	20%	100V		C855	1-126-162-11	ELECT	3.3uF	20%	50V	
97	C910	1-126-964-11	ELECT	10uF	20%	50V		C910	1-104-665-11	ELECT	100uF	20%	25V	
	C915	1-136-153-00	CERAMIC	0.01uF	5%	50V		C915	1-130-481-00	MYLAR	0.0068uF	5%	50V	
	C930	1-164-159-21	CERAMIC	0.1uF		50V		C930	1-136-167-00	FILM	0.15uF	5%	50V	
	C931	1-162-306-11	CERAMIC	0.01uF	30%	16V		C931	1-162-294-31	CERAMIC	0.001uF	10%	50V	
								C934	1-136-161-00	FILM	0.047uF	5%	50V	
	C950	1-126-964-11	ELECT	10uF	20%	50V		C950	1-104-665-11	ELECT	100uF	20%	25V	
	C965	1-136-153-00	CERAMIC	0.01uF	5%	50V		C965	1-130-481-00	MYLAR	0.0068uF	5%	50V	
	C1013	1-126-916-11	ELECT	1000uF	20%	6.3V		C1013	1-104-656-11	ELECT	2200uF	20%	6.3V	
	C1021	1-162-306-11	CERAMIC	0.01uF	30%	16V								
	C1832	1-136-167-00	FILM	0.15uF	5%	50V		C1832	1-136-155-00	FILM	0.015uF	5%	50V	
98	D901	8-719-987-63	DIODE 1N4148M					D901	8-719-200-82	DIODE 11ES2				
	D1009	8-719-200-82	DIODE 11ES2					D1009	8-719-987-63	DIODE 1N4148M				
	D1010	8-719-200-82	DIODE 11ES2					D1010	8-719-987-63	DIODE 1N4148M				
	D1012	8-719-013-63	DIODE UZ-30BS					D1012	8-719-011-10	DIODE UZ-30BS-TA				
	D1023	8-719-210-21	DIODE 11EQS04					D1023	8-719-200-82	DIODE 11ES2				

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Page	FORMER								NEW							
	Ref. No.	Part No.	Description	Remark					Ref. No.	Part No.	Description	Remark				
98	IC701	8-759-375-44	IC TMP87CS64YF-6361						IC701	8-759-398-86	IC TMP87CS64YF-6417 (NOTE)					
	JP105	1-247-895-91	CARBON	470K	5%	1/4W	(E,AUS,PX,MX,AR)									
	JP105	1-249-429-11	CARBON	10K	5%	1/4W	(AEP,UK,G,IT,EE)									
99	Q952	8-729-141-26	TRANSISTOR 2SC3622A-LK						Q952	8-729-119-78	TRANSISTOR 2SC2785-HFE					
	Q954	8-729-119-78	TRANSISTOR 2SC2785-HFE						Q954	8-729-141-26	TRANSISTOR 2SC3622A-LK					
	R304	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R304	1-249-432-11	CARBON	18K	5%	1/4W			
	R305	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R305	1-249-417-11	CARBON	1K	5%	1/4W			
	R306	1-247-840-00	CARBON	2.4K	5%	1/4W		R306	1-249-420-11	CARBON	1.8K	5%	1/4W	F		
	R354	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R354	1-249-432-11	CARBON	18K	5%	1/4W			
	R355	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R355	1-249-417-11	CARBON	1K	5%	1/4W			
	R356	1-247-840-00	CARBON	2.4K	5%	1/4W		R356	1-249-420-11	CARBON	1.8K	5%	1/4W	F		
	R454	1-247-863-91	CARBON	22K	5%	1/4W		R454	1-249-425-11	CARBON	4.7K	5%	1/4W	F		
	R455	1-247-863-91	CARBON	22K	5%	1/4W		R455	1-249-425-11	CARBON	4.7K	5%	1/4W	F		
	R708	1-249-423-11	CARBON	3.3K	5%	1/4W	F	R708	1-249-429-11	CARBON	10K	5%	1/4W			
	100	R740	1-247-863-91	CARBON	22K	5%	1/4W	F (AUS,PX)	R740	1-247-843-11	CARBON	3.3K	5%	1/4W	(AUS,PX)	
		R740	1-247-843-11	CARBON	3.3K	5%	1/4W	(E,MX,AR)	R740	1-249-425-11	CARBON	4.7K	5%	1/4W	F (E,MX,AR) (NOTE)	
		R741	1-247-863-91	CARBON	22K	5%	1/4W	F (AUS,PX)	R741	1-249-429-11	CARBON	10K	5%	1/4W	(AUS,PX) (NOTE)	
R741		1-249-423-11	CARBON	10K	5%	1/4W	F (E,MX,AR)	R741	1-249-427-11	CARBON	6.8K	5%	1/4W	F (E,MX,AR) (NOTE)		
R742		1-249-413-11	CARBON	470	5%	1/4W	F									
R766		1-247-807-31	CARBON	100	5%	1/4W				JUMPER						
R767		1-247-807-31	CARBON	100	5%	1/4W				JUMPER						
R768		1-247-807-31	CARBON	100	5%	1/4W				JUMPER						
R778		1-249-429-11	CARBON	10K	5%	1/4W	F									
R804		1-249-419-11	CARBON	1.5K	5%	1/4W	F	R804	1-249-417-11	CARBON	1K	5%	1/4W	F		
R825		1-247-887-00	CARBON	220K	5%	1/4W										
R827		1-249-429-11	CARBON	10K	5%	1/4W		R827	1-249-421-11	CARBON	2.2K	5%	1/4W	F		
R854		1-249-419-11	CARBON	1.5K	5%	1/4W	F	R854	1-249-417-11	CARBON	1K	5%	1/4W	F		
101	R917	1-249-429-11	CARBON	10K	5%	1/4W		R917	1-249-431-11	CARBON	15K	5%	1/4W			
	R930	1-249-429-11	CARBON	10K	5%	1/4W		R930	1-247-863-91	CARBON	22K	5%	1/4W			
	R931	1-249-429-11	CARBON	10K	5%	1/4W		R931	1-247-863-91	CARBON	22K	5%	1/4W			
	R932	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R932	1-249-429-11	CARBON	10K	5%	1/4W			
	R967	1-249-429-11	CARBON	10K	5%	1/4W		R967	1-249-431-11	CARBON	15K	5%	1/4W			
	R1835	1-247-863-91	CARBON	22K	5%	1/4W		R1835	1-249-426-11	CARBON	5.6K	5%	1/4W			
	RV301	1-238-600-11	RES, ADJ, CARBON 10K					RV301	1-238-630-11	RES, ADJ, CARBON 10K						
RV351	1-238-600-11	RES, ADJ, CARBON 10K					RV351	1-238-630-11	RES, ADJ, CARBON 10K							
102	*** MD BOARD ***								*** MD BOARD ***							
	Q623	8-729-801-93	TRANSISTOR 2SD1387					Q623	8-729-030-18	TRANSISTOR 2SD2525						
103	*** MIC BOARD ***								*** MIC BOARD ***							
	C907	1-124-259-00	ELECT	2.2uF	20%	50V		C907	1-136-160-00	FILM	0.039uF	5%	50V			
	R906	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R906	1-249-417-11	CARBON	1K	5%	1/4W	F		
	R907	1-249-436-11	CARBON	39K	5%	1/4W		R907	1-249-435-11	CARBON	33K	5%	1/4W			
	*	A-4389-163-A	PANEL BOARD, COMPLETE (AEP,UK,G,IT,EE)					*	A-4389-163-A	PANEL BOARD, COMPLETE (AEP,UK,G,IT)						
								A-4389-753-A	PANEL BOARD, COMPLETE (EE)							

**NOTE :** Refer to "Note for replacement of microprocessor (IC701)" on page 6 to replace the IC701,R740 and R741.

• Abbreviation

G : German model

IT : Italian model

EE : East European model

MX : Mexican model

AUS : Australian model

AR : Argentine model

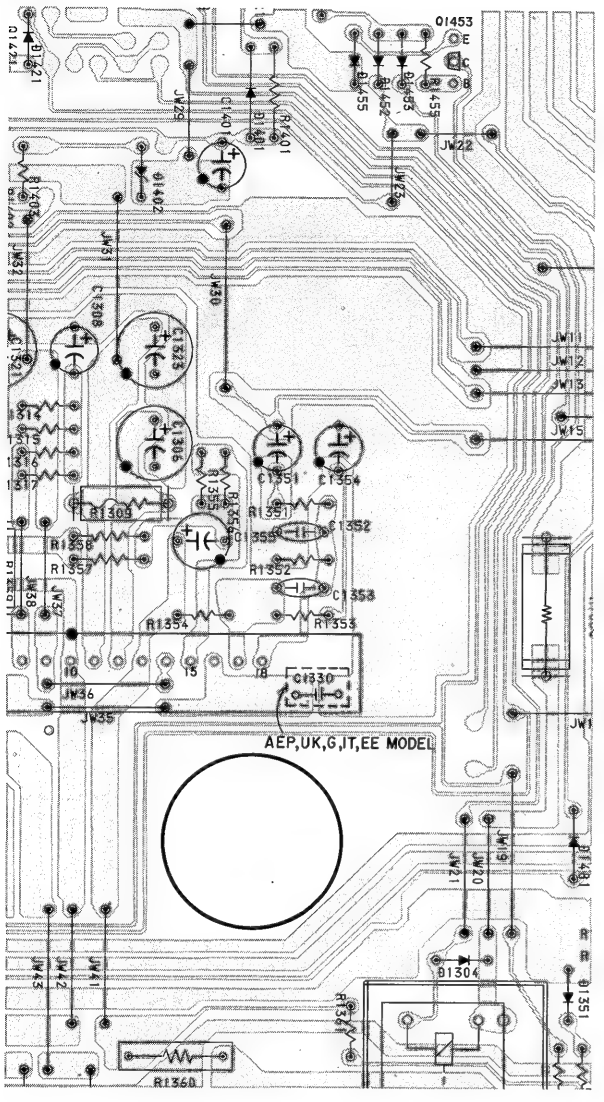
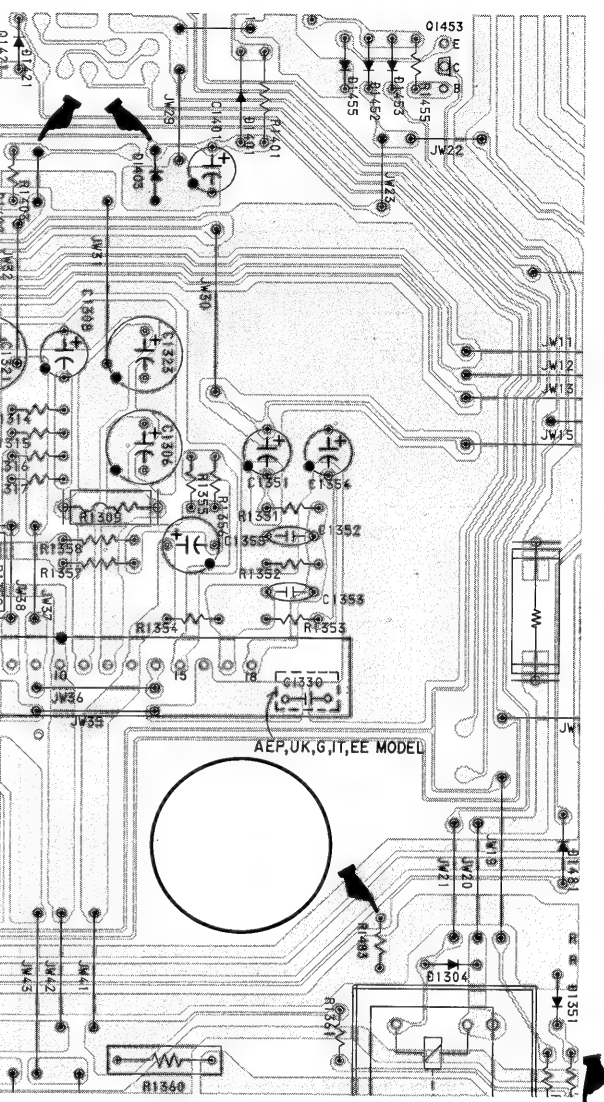
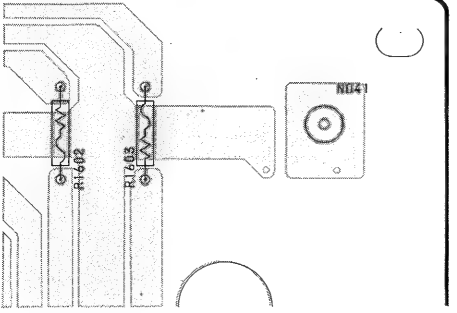
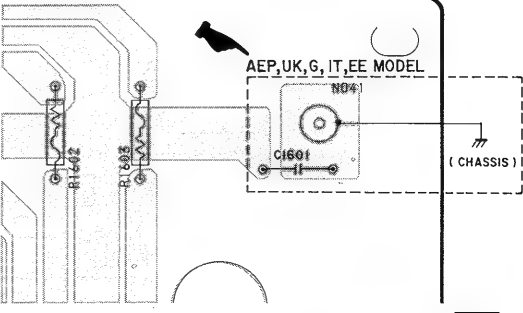
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

Page	FORMER							NEW						
	Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
103	C501	1-124-465-00	ELECT	0.47uF	20%	50V		C501	1-126-301-11	ELECT	1uF	20%	50V	
	C503	1-124-465-00	ELECT	0.47uF	20%	50V		C503	1-126-301-11	ELECT	1uF	20%	50V	
	C3046	1-126-177-11	ELECT	100uF	20%	10V								
	C3211	1-124-465-00	ELECT	0.47uF	20%	50V		C3211	1-126-301-11	ELECT	1uF	20%	50V	
104	D503	8-719-987-63	DIODE	1N4148M										
105								R3052	1-249-429-11	CARBON	10K	5%	1/4W	
106	S553	1-554-303-21	SWITCH, TACTILE (PTY)(AEP,UK,G,IT,EE)						S553	1-554-303-11	SWITCH, TACTILE (PTY)(AEP,UK,G,IT)			
			*** POWER AMP BOARD ***								*** POWER AMP BOARD ***			
	C1204	1-126-967-11	ELECT	47uF	20%	50V		C1204	1-126-933-11	ELECT	100uF	20%	10V	
	C1247	1-164-159-11	CERAMIC	0.1uF		50V	(AEP,UK,G,IT,EE)	C1247	1-162-306-11	CERAMIC	0.01uF	20%	16V	(AEP,UK,G,IT,EE)
	C1297	1-164-159-11	CERAMIC	0.1uF		50V	(AEP,UK,G,IT,EE)	C1297	1-162-306-11	CERAMIC	0.01uF	20%	16V	(AEP,UK,G,IT,EE)
107	C1354	1-126-967-11	ELECT	47uF	20%	50V		C1354	1-126-933-11	ELECT	100uF	20%	10V	
	C1492	1-164-159-21	CERAMIC	0.1uF		50V	(AEP,UK,G,IT,EE)							
	C1493	1-136-157-00	FILM	0.022uF	5%	50V	(AEP,UK,G,IT,EE)							
	D1251	8-719-987-63	DIODE 1N4148M					D1261	8-719-987-63	DIODE 1N4148M				
	D1402	8-719-987-63	DIODE 1N4148M					D1403	8-719-987-63	DIODE 1N4148M				
	Q1422	8-729-900-65	TRANSISTOR DTA114ES					Q1422	8-729-422-57	TRANSISTOR UN4111				
108	R1253	1-249-413-11	CARBON	470	5%	1/4W	F	R1253	1-249-415-11	CARBON	680	5%	1/4W	F
	R1303	1-249-413-11	CARBON	470	5%	1/4W	F	R1303	1-249-415-11	CARBON	680	5%	1/4W	F
	R1422	1-249-425-11	CARBON	4.7K	5%	1/4W	F							
	R1443	1-249-437-11	CARBON	47K	5%	1/4W		R1443	1-249-436-11	CARBON	39K	5%	1/4W	
	R1444	1-249-439-11	CARBON	68K	5%	1/4W		R1444	1-249-438-11	CARBON	56K	5%	1/4W	
109								R1483	1-249-419-11	CARBON	1.5K	5%	1/4W	F
			*** TC CONTROL BOARD ***								*** TC CONTROL BOARD ***			
	D630	8-719-058-03	DIODE SEL5423E-TP15 ( $\triangleright$ )(DECK B)					D630	8-719-032-86	DIODE SEL5420E ( $\triangleright$ )(DECK B)				
	D631	8-719-058-03	DIODE SEL5423E-TP15 ( $\triangleleft$ )(DECK B)					D631	8-719-032-86	DIODE SEL5420E ( $\triangleleft$ )(DECK B)				
	D632	8-719-058-03	DIODE SEL5423E-TP15 ( $\triangleright$ )(DECK A)					D632	8-719-032-86	DIODE SEL5420E ( $\triangleright$ )(DECK A)				
	D633	8-719-058-03	DIODE SEL5423E-TP15 ( $\triangleleft$ )(DECK A)					D633	8-719-032-86	DIODE SEL5420E ( $\triangleleft$ )(DECK A)				
			*** TC SW BOARD ***							*** TC SW BOARD ***				
	* CN503	1-568-945-11	PIN, CONNECTOR 7P					CN503	1-573-734-31	PIN, CONNECTOR 7P				
113			*** TRANS BOARD ***								*** TRANS BOARD ***			
								C1601	1-162-306-11	CERAMIC	0.01uF	20%	16V	(AEP,UK,G,IT,EE)
	* CN1601	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P (AUS,MX)					CN1601	1-774-108-11	PIN, CONNECTOR (PC BOARD) 2P (AUS,MX)				
	$\Delta$ F1603	1-532-350-00	FUSE (T4A 250V)(E,PX,MX,AR)					$\Delta$ F1603	1-532-465-31	FUSE, TIME-LAG (3.15A 250V)(E,PX,MX,AR)				
	$\Delta$ F1604	1-532-259-00	FUSE (T1.6A 250V)					$\Delta$ F1604	1-532-503-31	FUSE, TIME-LAG (1.6A 250V)				
			(AEP,UK,G,IT,EE,E,AUS,PX,AR)								(AEP,UK,G,IT,EE,E,AUS,PX,AR)			
	$\Delta$ R1601	1-219-139-11	FUSIBLE	0.68	5%	1/4W	F	$\Delta$ R1601	1-219-124-11	FUSIBLE	0.68	5%	1/4W	F
	$\Delta$ R1602	1-219-136-11	FUSIBLE	0.22	5%	1/4W	F	$\Delta$ R1602	1-219-121-11	FUSIBLE	0.22	5%	1/4W	F
	$\Delta$ R1603	1-219-136-11	FUSIBLE	0.22	5%	1/4W	F	$\Delta$ R1603	1-219-121-11	FUSIBLE	0.22	5%	1/4W	F

 : indicates changed portion.

— 12 —




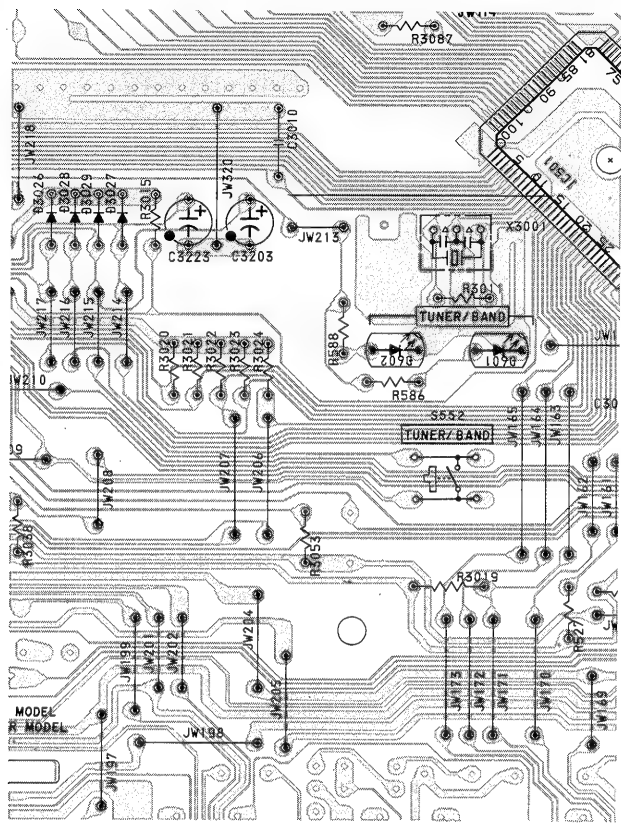
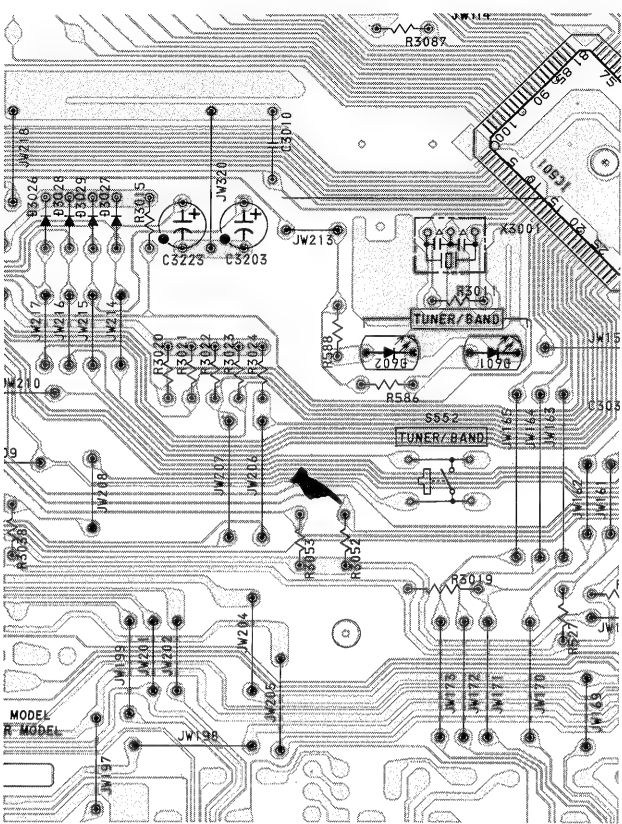

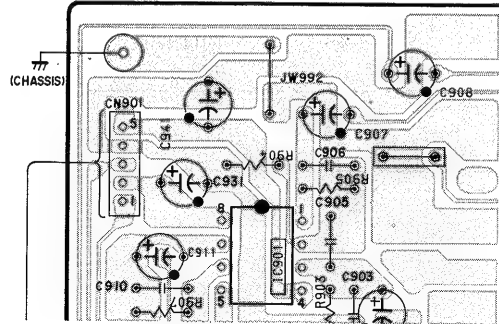
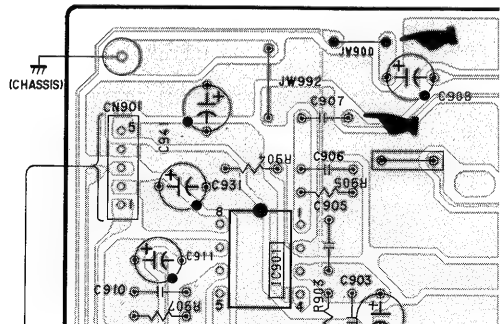

Page	FORMER	NEW
63	<p data-bbox="219 238 487 300"><b>[POWER AMP BOARD]</b> Location : C-H, 8-11</p>  <p data-bbox="706 1440 836 1460">1-659-812-12</p>	<p data-bbox="868 238 1136 300"><b>[POWER AMP BOARD]</b> Location : C-H, 8-11</p>  <p data-bbox="1356 1440 1485 1460">1-659-812-13</p>
64	<p data-bbox="219 1481 462 1543"><b>[TRANS BOARD]</b> Location : A-B, 15-17</p>  <p data-bbox="625 1937 787 1958">1-659-218-11 (12)</p>	<p data-bbox="868 1481 1112 1543"><b>[TRANS BOARD]</b> Location : A-B, 15-17</p>  <p data-bbox="1258 1937 1421 1958">1-659-218-11 (14)</p>

: indicates changed portion.

Page	FORMER	NEW
66	<p><b>[POWER AMP BOARD]</b> Location : F-H, 8-11</p> <p>Location : L-O, 7-9</p>	<p><b>[POWER AMP BOARD]</b> Location : F-H, 8-11</p> <p>Location : L-O, 7-9</p>
67	<p><b>[TRANS BOARD]</b> Location : B-D, 19-22</p> <p><b>[TRANS BOARD]</b></p>	<p><b>[TRANS BOARD]</b> Location : B-D, 19-22</p> <p><b>[TRANS BOARD]</b></p>



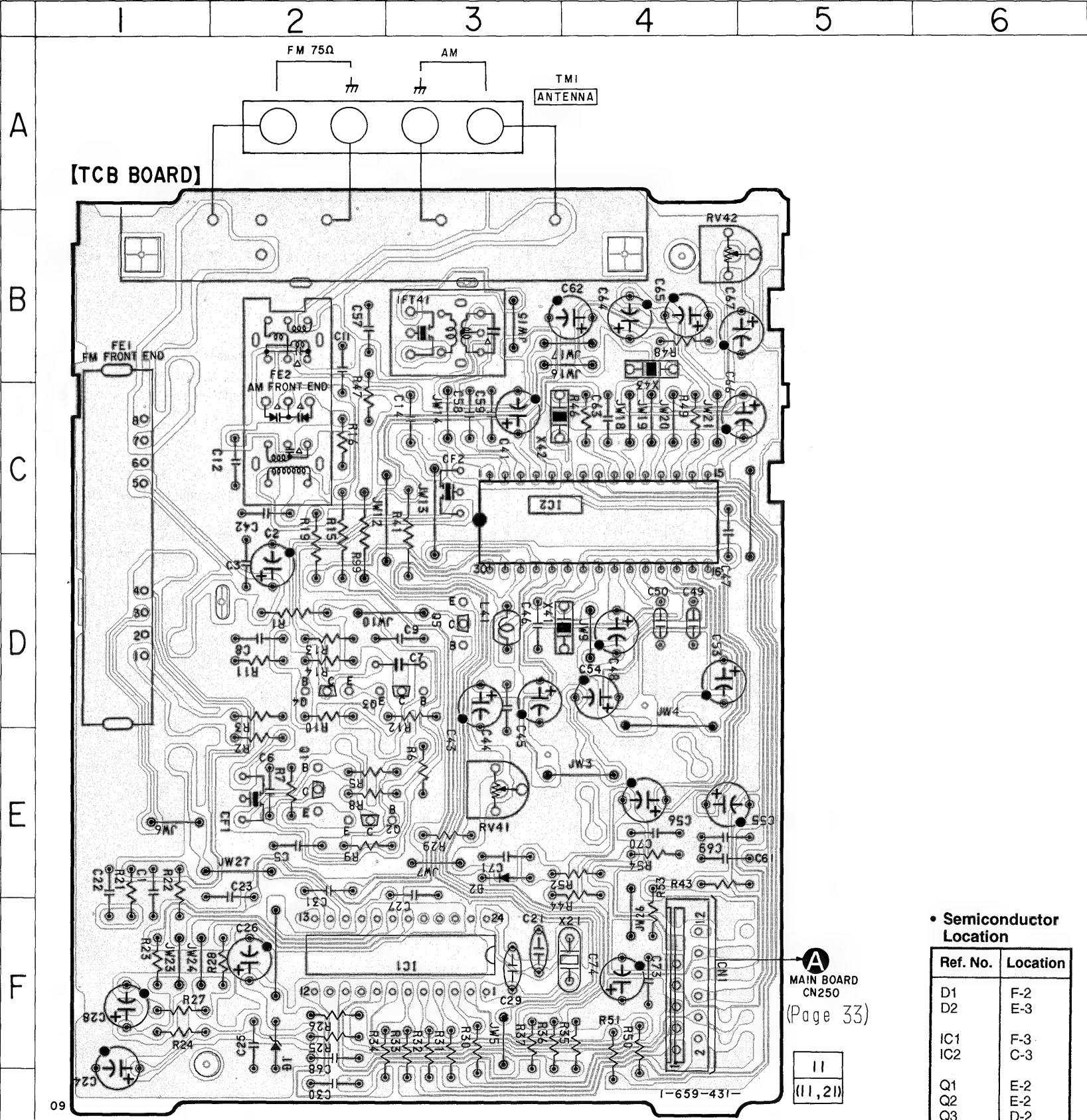
 : indicates changed portion.

Page	FORMER	NEW
73	<p data-bbox="180 256 375 281"><b>[PANEL BOARD]</b></p> <p data-bbox="180 292 407 317">Location : B-F, 7-10</p>  <div data-bbox="630 1197 786 1255">1-659-410-<div>11 (13)</div></div>	<p data-bbox="829 256 1024 281"><b>[PANEL BOARD]</b></p> <p data-bbox="829 292 1057 317">Location : B-F, 7-10</p>  <div data-bbox="1279 1197 1435 1255">1-659-410-<div>11 (14)</div></div>
75	<p data-bbox="180 1317 334 1342"><b>[MIC BOARD]</b></p> <p data-bbox="180 1353 415 1377">Location : A-C, 21-24</p>  <div data-bbox="630 1777 786 1835">1-659-414-<div>11 (13)</div></div>	<p data-bbox="829 1317 984 1342"><b>[MIC BOARD]</b></p> <p data-bbox="829 1353 1065 1377">Location : A-C, 21-24</p>  <div data-bbox="1279 1777 1435 1835">1-659-414-<div>11 (14)</div></div>

TCB BOARD CHANGED (E, AUS, MX, PX, AR MODEL)

• The TCB board was renewed with a change of parts, please look at this.

PRINTED WIRING BOARD



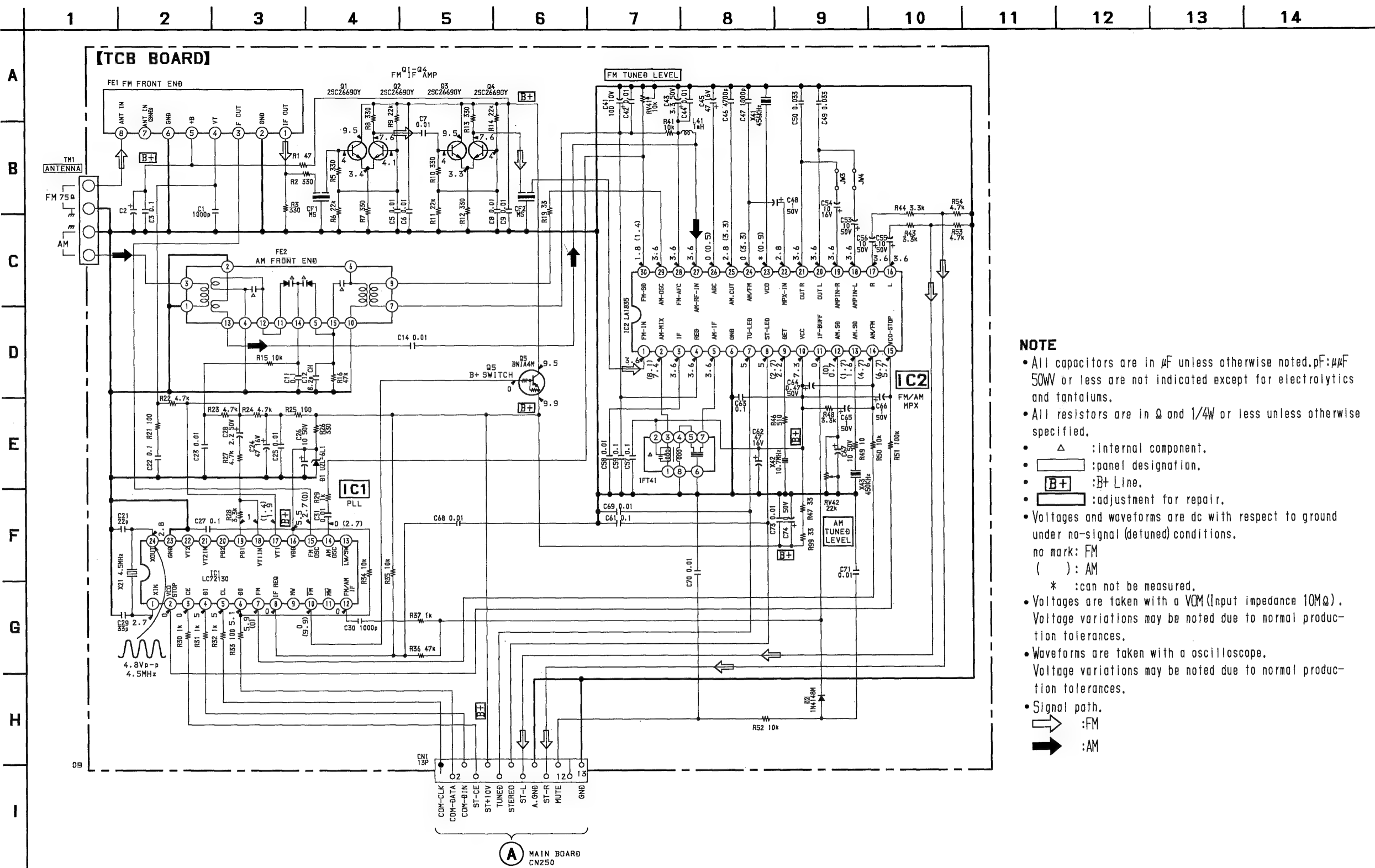
Note:

- : parts extracted from the component side.
- △ : Internal component.
- Pattern from the side which enable seeing.
- Abbreviation
- AUS : Australian model.
- AR : Argentine model.
- MX : Mexican model.

Semiconductor Location

Ref. No.	Location
D1	F-2
D2	E-3
IC1	F-3
IC2	C-3
Q1	E-2
Q2	E-2
Q3	D-2
Q4	D-2
Q5	D-3

SCHEMATIC DIAGRAM



NOTE

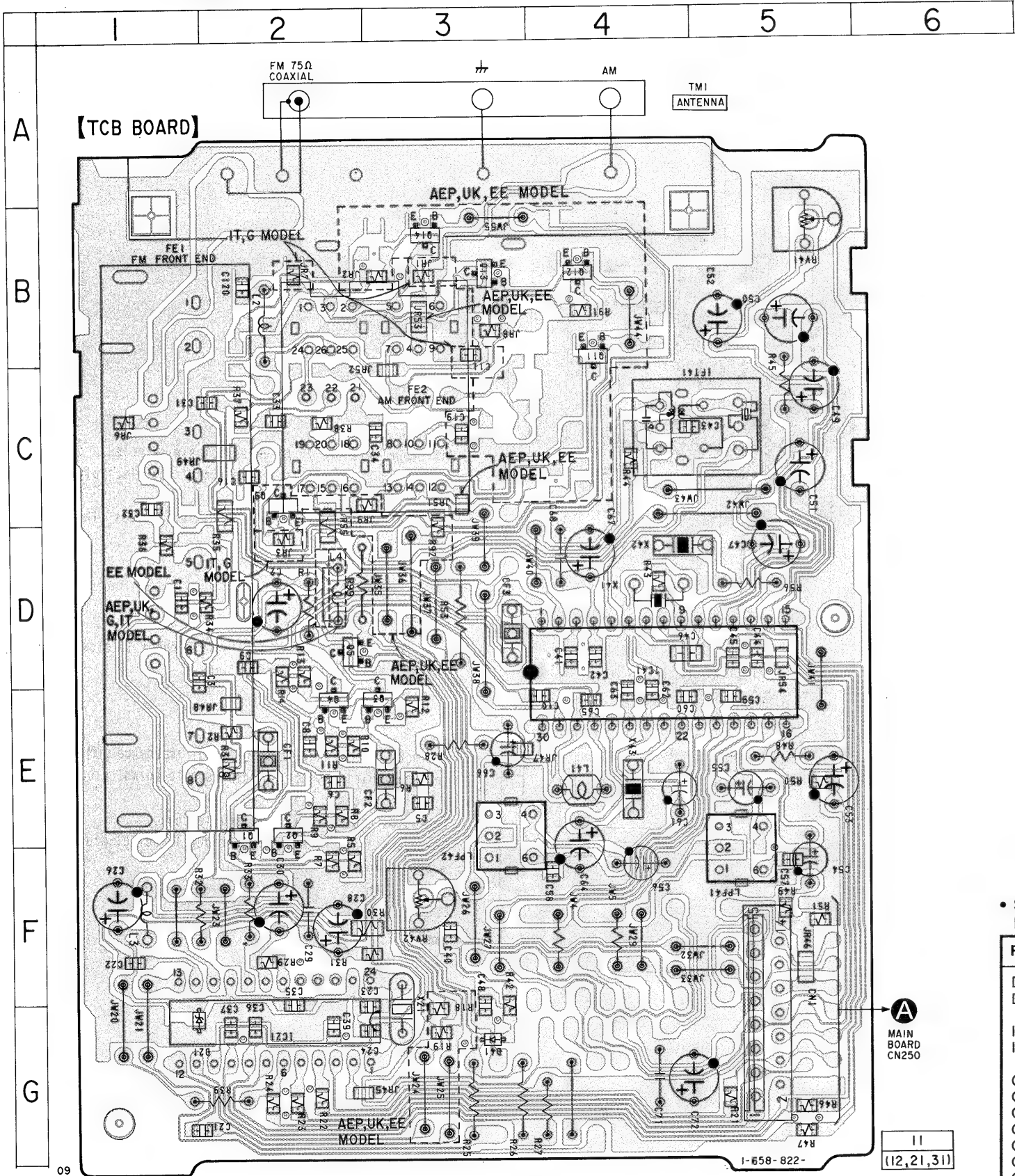
- All capacitors are in  $\mu F$  unless otherwise noted, pF:  $\mu F$  50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4W$  or less unless otherwise specified.
- △ : internal component.
- Panel designation.
- B+ : B+ Line.
- adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- ( ) : AM
- \* : can not be measured.
- Voltages are taken with a VOM (Input impedance  $10M\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
- FM
- AM



TCB BOARD CHANGED (AEP, UK, G, IT, EE MODEL)

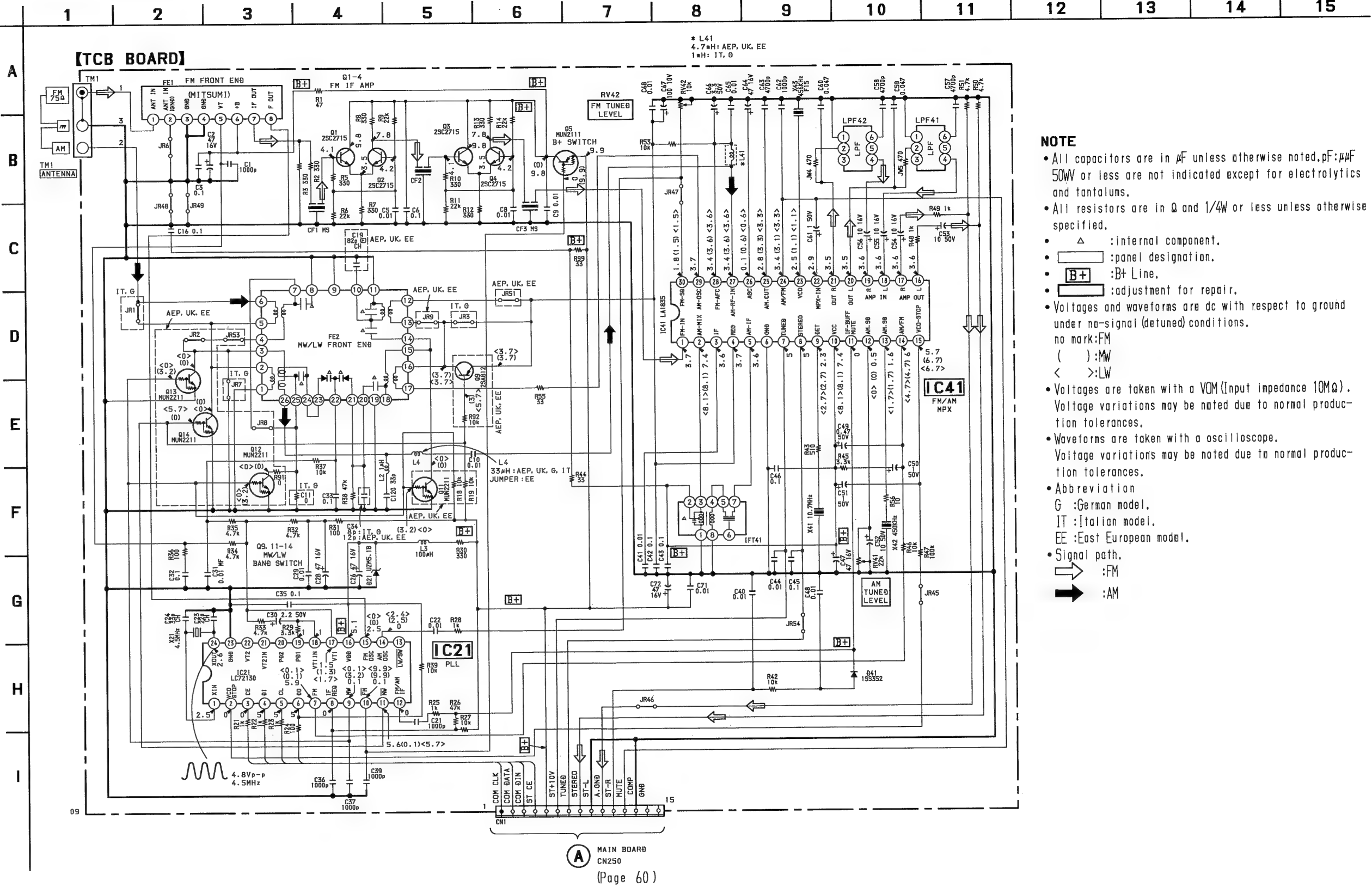
• The TCB board was renewed with a change of parts, please look at this.

PRINTED WIRING BOARD



- Note:
- : parts extracted from the component side.
  - Δ : Internal component.
  - : Pattern from the side which enable seeing.
  - Abbreviation
  - G : German model.
  - IT : Italian model.
  - EE : East European model.

SCHEMATIC DIAGRAM



- NOTE
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50W or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
  - Δ : internal component.
  - : panel designation.
  - B+ : B+ Line.
  - : adjustment for repair.
  - Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - no mark: FM
  - ( ) : MW
  - < > : LW
  - Voltages are taken with a VOM (Input impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
  - Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
  - Abbreviation
  - G : German model.
  - IT : Italian model.
  - EE : East European model.
  - Signal path.
  - : FM
  - : AM

## ELECTRICAL PARTS LIST

Note:

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable

- CAPACITORS  
uF :  $\mu$  F
- COILS  
uH :  $\mu$  H
- Abbreviation  
G : German model  
IT : Italian model  
EE : East European model  
MX : Mexican model  
AUS : Australian model  
AR : Argentine model

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description	Remark			
*	A-4303-513-A	TCB BOARD, COMPLETE (E,AUS,PX,MX,AR)	*****				C63	1-164-159-21	CERAMIC	0.1uF		50V	F
		< CAPACITOR >					C64	1-124-902-00	ELECT	0.47uF	20%	50V	
							C65	1-124-903-11	ELECT	1.0uF	20%	50V	
							C66	1-124-903-11	ELECT	1.0uF	20%	50V	
C1	1-162-294-31	CERAMIC	0.001uF	10%	50V		C67	1-126-964-11	ELECT	10uF	20%	50V	
C2	1-126-967-11	ELECT	47uF	20%	16V		C68	1-162-306-11	CERAMIC	10000PF	30%	16V	
C3	1-164-159-21	CERAMIC	0.1uF		50V		C69	1-162-306-11	CERAMIC	10000PF	30%	16V	
C5	1-162-306-11	CERAMIC	10000PF	30%	16V		C70	1-162-306-11	CERAMIC	10000PF	30%	16V	
C6	1-162-306-11	CERAMIC	10000PF	30%	16V		C71	1-162-306-11	CERAMIC	10000PF	30%	16V	
C7	1-101-004-00	CERAMIC	0.01uF		50V		C73	1-162-306-11	CERAMIC	10000PF	30%	16V	
C8	1-162-306-11	CERAMIC	10000PF	30%	16V		C74	1-126-964-11	ELECT	10uF	20%	50V	
C9	1-162-306-11	CERAMIC	10000PF	30%	16V				< FILTER >				
C11	1-164-159-21	CERAMIC	0.1uF		50V		CF1	1-567-389-11	FILTER, CERAMIC				
C12	1-162-198-31	CERAMIC	8.2PF	10%	50V		CF2	1-567-389-11	FILTER, CERAMIC				
C14	1-162-306-11	CERAMIC	10000PF	30%	16V				< CONNECTOR >				
C21	1-102-959-00	CERAMIC	22PF	5%	50V		* CN1	1-568-832-11	SOCKET, CONNECTOR 13P				
C22	1-164-159-21	CERAMIC	0.1uF		50V				< DIODE >				
C23	1-162-306-11	CERAMIC	10000PF	30%	16V		D1	8-719-933-33	DIODE UZL-6L1-TA				
C24	1-126-967-11	ELECT	47uF	20%	16V		D2	8-719-987-63	DIODE 1N4148M-TA				
C25	1-162-306-11	CERAMIC	10000PF	30%	16V				< FRONT-END >				
C26	1-126-964-11	ELECT	10uF	20%	50V		FE1	1-233-533-11	ENCAPSULATED COMPONENT				
C27	1-164-159-21	CERAMIC	0.1uF		50V		FE2	1-239-260-11	ENCAPSULATED COMPONENT				
C28	1-124-925-11	ELECT	2.2uF	20%	100V				< IC >				
C29	1-102-518-11	CERAMIC	33PF	5%	50V		IC1	8-759-288-54	IC LC72130				
C30	1-162-294-31	CERAMIC	0.001uF	10%	50V		IC2	8-759-176-03	IC LA1835				
C31	1-162-306-11	CERAMIC	10000PF	30%	16V				< IFT >				
C41	1-126-933-11	ELECT	100uF	20%	10V		IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)				
C42	1-162-306-11	CERAMIC	10000PF	30%	16V				< COIL >				
C43	1-126-962-11	ELECT	3.3uF	20%	50V		L41	1-410-119-11	MICRO INDUCTOR (EL TYPE)				
C44	1-162-306-11	CERAMIC	10000PF	30%	16V				< TRANSISTOR >				
C45	1-124-589-11	ELECT	47uF	20%	16V		Q1	8-729-230-99	TRANSISTOR 2SC26690Y-TPE4				
C46	1-162-600-11	CERAMIC	4700PF	30%	16V		Q2	8-729-230-99	TRANSISTOR 2SC26690Y-TPE4				
C47	1-162-294-31	CERAMIC	0.001uF	10%	50V		Q3	8-729-230-99	TRANSISTOR 2SC26690Y-TPE4				
C48	1-126-160-11	ELECT	1uF	20%	50V		Q4	8-729-230-99	TRANSISTOR 2SC26690Y-TPE4				
C49	1-136-159-00	METALIZED FILM	0.033uF	5%	50V		Q5	8-729-422-57	TRANSISTOR BN1A4M-TP				
C50	1-136-159-00	METALIZED FILM	0.033uF	5%	50V								
C53	1-126-964-11	ELECT	10uF	20%	50V								
C54	1-126-157-11	ELECT	10uF	20%	16V								
C55	1-126-964-11	ELECT	10uF	20%	50V								
C56	1-126-964-11	ELECT	10uF	20%	50V								
C57	1-164-159-21	CERAMIC	0.1uF		50V	F							
C58	1-162-306-11	CERAMIC	10000PF	30%	16V								
C59	1-164-159-21	CERAMIC	0.1uF		50V	F							
C61	1-164-159-21	CERAMIC	0.1uF		50V	F							
C62	1-126-967-11	ELECT	47uF	20%	16V								



Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R1	1-249-401-11	CARBON	47	5%	1/4W F
R2	1-249-411-11	CARBON	330	5%	1/4W
R3	1-249-411-11	CARBON	330	5%	1/4W
R5	1-249-411-11	CARBON	330	5%	1/4W
R6	1-247-863-91	CARBON	22K	5%	1/4W
R7	1-249-411-11	CARBON	330	5%	1/4W
R8	1-249-411-11	CARBON	330	5%	1/4W
R9	1-247-863-91	CARBON	22K	5%	1/4W
R10	1-249-411-11	CARBON	330	5%	1/4W
R11	1-247-863-91	CARBON	22K	5%	1/4W
R12	1-249-411-11	CARBON	330	5%	1/4W
R13	1-249-411-11	CARBON	330	5%	1/4W
R14	1-247-863-91	CARBON	22K	5%	1/4W
R15	1-249-429-11	CARBON	10K	5%	1/4W
R16	1-249-437-11	CARBON	47K	5%	1/4W
R19	1-249-399-11	CARBON	33	5%	1/4W F
R21	1-247-807-31	CARBON	100	5%	1/4W
R22	1-249-425-11	CARBON	4.7K	5%	1/4W F
R23	1-249-425-11	CARBON	4.7K	5%	1/4W F
R24	1-249-425-11	CARBON	4.7K	5%	1/4W F
R25	1-247-807-31	CARBON	100	5%	1/4W
R26	1-249-411-11	CARBON	330	5%	1/4W
R27	1-249-425-11	CARBON	4.7K	5%	1/4W F
R28	1-249-423-11	CARBON	3.3K	5%	1/4W F
R29	1-249-417-11	CARBON	1K	5%	1/4W F
R30	1-249-417-11	CARBON	1K	5%	1/4W F
R31	1-249-417-11	CARBON	1K	5%	1/4W F
R32	1-249-417-11	CARBON	1K	5%	1/4W F
R33	1-247-807-31	CARBON	100	5%	1/4W
R34	1-249-429-11	CARBON	10K	5%	1/4W
R35	1-249-429-11	CARBON	10K	5%	1/4W
R36	1-249-437-11	CARBON	47K	5%	1/4W
R37	1-249-417-11	CARBON	1K	5%	1/4W F
R41	1-249-429-11	CARBON	10K	5%	1/4W
R43	1-249-423-11	CARBON	3.3K	5%	1/4W
R44	1-249-423-11	CARBON	3.3K	5%	1/4W
R46	1-249-442-11	CARBON	510	5%	1/4W
R47	1-249-399-11	CARBON	33	5%	1/4W F
R48	1-249-423-11	CARBON	3.3K	5%	1/4W F
R49	1-249-393-11	CARBON	10	5%	1/4W F
R50	1-249-429-11	CARBON	10K	5%	1/4W
R51	1-249-441-11	CARBON	100K	5%	1/4W
R52	1-249-429-11	CARBON	10K	5%	1/4W
R53	1-249-425-11	CARBON	4.7K	5%	1/4W F
R54	1-249-425-11	CARBON	4.7K	5%	1/4W F
R99	1-249-399-11	CARBON	33	5%	1/4W F
< VARIABLE RESISTOR >					
RV41	1-238-600-11	RES, ADJ, CARBON 10K			
RV42	1-238-601-11	RES, ADJ, CARBON 22K			

Ref. No.	Part No.	Description	Remark		
< TERMINAL >					
TM1	1-537-238-21	TERMINAL BOARD (ANTENNA)			
< VIBRATOR >					
X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)			
X41	1-577-075-11	OSCILLATOR, CERAMIC (456KHz)			
X42	1-760-220-11	FILTER, CERAMIC (10.7MHz)			
X43	1-527-981-00	FILTER, CERAMIC (450KHz)			
*****					
*	A-4303-502-A	TCB BOARD, COMPLETE (AEP,UK)	*****		
*	A-4303-503-A	TCB BOARD, COMPLETE (G,IT)	*****		
*	A-4303-504-A	TCB BOARD, COMPLETE (EE)	*****		
< CAPACITOR >					
C1	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C2	1-126-967-11	ELECT	47uF	20%	16V
C3	1-163-038-91	CERAMIC	CHIP	0.1uF	25V
C5	1-163-031-11	CERAMIC CHIP	0,01uF		50V
C6	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C7	1-101-004-00	CERAMIC	0.01uF		50V (EE)
C8	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C9	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C10	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C11	1-216-295-91	CONDUCTOR, CHIP (2012)(G,IT)			
C16	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C19	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C21	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C22	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C23	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C24	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C26	1-126-967-11	ELECT	47uF	20%	16V
C28	1-126-967-11	ELECT	47uF	20%	16V
C29	1-162-306-11	CERAMIC	0.01uF	30%	16V
C30	1-124-925-11	ELECT	2.2uF	20%	100V
C31	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C32	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C33	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C34	1-163-091-00	CERAMIC CHIP	8PF		50V
C34	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C35	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C36	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C37	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C39	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C40	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C41	1-163-031-11	CERAMIC CHIP	0.01uF		50V			< FRONT-END >			
C42	1-163-038-91	CERAMIC CHIP	0.1uF		25V						
C43	1-163-038-91	CERAMIC CHIP	0.1uF		25V	FE1	1-193-385-11	FRONT END (3 GANG)(EE)			
C44	1-163-031-11	CERAMIC CHIP	0.01uF		50V	FE1	1-233-542-11	FRONT END (4 GANG)(AEP,UK,G,IT)			
C45	1-163-038-91	CERAMIC CHIP	0.1uF		25V	FE2	1-233-514-11	ENCAPSULATED COMPONENT (AEP,UK,EE)			
						FE2	1-239-260-11	ENCAPSULATED COMPONENT (G,IT)			
C46	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V			< IC >			
C47	1-126-967-11	ELECT	47uF	20%	16V						
C48	1-163-031-11	CERAMIC CHIP	0.01uF		50V						
C49	1-124-902-00	ELECT	0.47uF	20%	50V	IC21	8-759-288-54	IC LC72130			
C50	1-124-903-11	ELECT	1.0uF	20%	50V	IC41	8-759-176-03	IC LA1835			
C51	1-124-903-11	ELECT	1.0uF	20%	50V			< IFT >			
C52	1-126-964-11	ELECT	10uF	20%	50V						
C53	1-126-964-11	ELECT	10uF	20%	50V	IFT41	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)			
C54	1-126-157-11	ELECT	10uF	20%	16V			< JUMPER RESISTOR >			
C55	1-126-157-11	ELECT	10uF	20%	16V						
C56	1-126-157-11	ELECT	10uF	20%	16V	JR1	1-216-295-11	METAL CHIP	0	5% 1/10W	
C57	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V					(G,IT)	
C58	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	JR2	1-216-295-11	METAL CHIP	0	5% 1/10W	
C59	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V					(AEP,UK,EE)	
				(AEP,UK,G,IT)		JR3	1-216-295-11	METAL CHIP	0	5% 1/10W	
C59	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V (EE)					(G,IT)	
C60	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	JR6	1-216-295-11	METAL CHIP	0	5% 1/10W	
				(AEP,UK,G,IT)		JR7	1-216-295-11	METAL CHIP	0	5% 1/10W	
C60	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V (EE)					(G,IT)	
C61	1-126-301-11	ELECT	1uF	20%	50V						
C62	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	JR8	1-216-295-11	METAL CHI	0	5% 1/10W	
C63	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V					(AEP,UK,EE)	
						JR9	1-216-295-11	METAL CHIP	0	5% 1/10W	
C64	1-126-967-11	ELECT	47uF	20%	16V					(AEP,UK,EE)	
C65	1-163-031-11	CERAMIC CHIP	0.01uF		50V	JR45	1-216-295-11	METAL CHIP	0	5% 1/10W	
C66	1-126-162-11	ELECT	3.3uF	20%	50V	JR46	1-216-296-11	METAL CHIP	0	5% 1/8W	
C67	1-126-933-11	ELECT	100uF	20%	10V	JR47	1-216-295-11	METAL CHIP	0	5% 1/10W	
C68	1-162-306-11	CERAMIC	0.01uF	30%	16V						
						JR48	1-216-295-11	METAL CHI	0	5% 1/10W	
C71	1-162-306-11	CERAMIC	0.01uF	30%	16V	JR49	1-216-296-11	METAL CHIP	0	5% 1/8W	
C72	1-126-967-11	ELECT	47uF	20%	16V	JR51	1-216-295-11	METAL CHI	0	5% 1/10W	
C120	1-163-105-00	CERAMIC CHIP	33PF	5%	50V					(AEP,UK,EE)	
				(AEP,UK,G,IT)		JR52	1-216-295-11	METAL CHIP	0	5% 1/10W	
						JR53	1-216-296-11	METAL CHIP	0	5% 1/8W	
		< FILTER >								(AEP,UK,EE)	
CF1	1-567-389-11	FILTER, CERAMIC (EE)				JR54	1-216-295-11	METAL CHIP	0	5% 1/10W	
CF1	1-579-374-71	FILTER, CERAMIC (AEP,UK,G,IT)						< JUMPER RESISTOR >			
CF2	1-760-393-11	FILTER, CERAMIC (AEP,UK,G,IT)									
CF3	1-567-389-11	FILTER, CERAMIC (EE)									
CF3	1-760-393-11	FILTER, CERAMIC (AEP,UK,G,IT)				JW4	1-249-413-11	CARBON	470	5% 1/4W	
										(AEP,UK,G,IT)	
		< CONNECTOR >				JW5	1-249-413-11	CARBON	470	5% 1/4W	
* CN1	1-568-834-11	SOCKET, CONNECTOR 15P								(AEP,UK,G,IT)	
		< DIODE >						< COIL >			
						L2	1-414-142-11	MICRO INDUCTOR 1uH (AEP,UK,G,IT)			
D21	8-719-976-99	DIODE UDZ-TE-17-5.1B				L3	1-410-521-11	MICRO INDUCTOR 100uH			
D41	8-719-016-74	DIODE 1SS352-TPH3				L4	1-410-515-11	INDUCTOR 33uH (AEP,UK,G,IT)			
						L41	1-407-500-00	MICRO INDUCTOR 4.7mH (AEP,UK,EE)			
						L41	1-410-119-11	MICRO INDUCTOR (EL TYPE) 1mH (G,IT)			

## TCB

Ref. No.	Part No.	Description	Remark
		< FILTER >	
LPF41	1-239-845-11	FILTER, LOW PASS	
LPF42	1-239-845-11	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
Q2	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
Q3	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
Q4	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
Q5	8-729-424-08	TRANSISTOR UN2111	
Q9	8-729-216-22	TRANSISTOR 2SA812-M5M6 (AEP,UK,EE)	
Q11	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
Q12	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
Q13	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
Q14	8-729-421-22	TRANSISTOR UN2211 (AEP,UK,EE)	
		< RESISTOR >	
R1	1-249-401-11	CARBON 47	5% 1/4W F
R2	1-216-037-00	METAL CHIP 330	5% 1/10W
R3	1-216-037-00	METAL CHIP 330	5% 1/10W
R5	1-216-037-00	METAL CHIP 330	5% 1/10W
R6	1-216-081-00	METAL CHIP 22K	5% 1/10W
R7	1-216-037-00	METAL CHIP 330	5% 1/10W
R8	1-216-037-00	METAL CHIP 330	5% 1/10W
R9	1-216-081-00	METAL CHIP 22K	5% 1/10W
R10	1-216-037-00	METAL CHIP 330	5% 1/10W
R11	1-216-081-00	METAL CHIP 22K	5% 1/10W
R12	1-216-037-00	METAL CHIP 330	5% 1/10W
R13	1-216-037-00	METAL CHIP 330	5% 1/10W
R14	1-216-081-00	METAL CHIP 22K	5% 1/10W
R18	1-216-073-00	METAL CHIP 10K	5% 1/10W (AEP,UK,EE)
R19	1-216-073-00	METAL CHIP 10K	5% 1/10W (AEP,UK,EE)
R21	1-216-049-11	METAL CHIP 1.0K	5% 1/10W
R22	1-216-049-11	METAL CHIP 1.0K	5% 1/10W
R23	1-216-049-11	METAL CHIP 1.0K	5% 1/10W
R24	1-216-025-11	METAL CHIP 100	5% 1/10W
R25	1-249-417-11	CARBON 1K	5% 1/4W F
R26	1-249-437-11	CARBON 47K	5% 1/4W
R27	1-249-429-11	CARBON 10K	5% 1/4W
R28	1-249-417-11	CARBON 1K	5% 1/4W F
R29	1-216-061-00	METAL CHIP 3.3K	5% 1/10W
R30	1-216-186-00	METAL CHIP 330	5% 1/8W
R31	1-216-025-11	METAL CHIP 100	5% 1/10W
R32	1-249-425-11	CARBON 4.7K	5% 1/4W F
R33	1-249-425-11	CARBON 4.7K	5% 1/4W F
R34	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R35	1-216-214-00	METAL CHIP 4.7K	5% 1/8W
R36	1-216-025-11	METAL CHIP 100	5% 1/10W
R37	1-216-073-00	METAL CHIP 10K	5% 1/10W
R38	1-216-089-11	METAL CHIP 47K	5% 1/10W

Ref. No.	Part No.	Description	Remark
R39	1-249-429-11	CARBON 10K	5% 1/4W
R42	1-216-073-00	METAL CHIP 10K	5% 1/10W
R43	1-216-042-00	METAL CHIP 510	5% 1/10W
R44	1-216-021-00	METAL CHIP 68	5% 1/10W
R45	1-249-423-11	CARBON 3.3K	5% 1/4W F
R46	1-216-073-00	METAL CHIP 10K	5% 1/10W
R47	1-216-097-11	METAL CHIP 100K	5% 1/10W
R48	1-249-417-11	CARBON 1K	5% 1/4W F
R49	1-216-049-11	METAL CHIP 1.0K	5% 1/10W
R50	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R51	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R53	1-249-429-11	CARBON 10K	5% 1/4W
R55	1-216-162-00	METAL CHIP 33	5% 1/8W
R56	1-249-393-11	CARBON 10	5% 1/4W F
R91	1-216-295-11	METAL CHIP 0	5% 1/10W (AEP,UK,EE)
R92	1-216-073-00	METAL CHIP 10K	5% 1/10W (AEP,UK,EE)
R99	1-249-399-11	CARBON 33	5% 1/4W F
		< VARIABLE RESISTOR >	
RV41	1-238-601-11	RES, ADJ, CARBON 22K	
RV42	1-238-600-11	RES, ADJ, CARBON 10K	
		< TERMINAL >	
TM1	1-537-488-11	TERMINAL BOARD (ANT) (ANTENNA)	
		< VIBRATOR >	
X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)	
X41	1-760-220-11	FILTER, CERAMIC (10.7MHz)	
X42	1-527-981-00	FILTER, CERAMIC (450KHz)	
X43	1-577-075-11	OSCILLATOR, CERAMIC (456KHz)	

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# SS-LB455

## SERVICE MANUAL



*AEP Model  
UK Model  
E Model  
Australian Model  
PX Model*

This set is the speaker system  
in LBT-N455.

**Photo : L-ch**

### SPECIFICATIONS

Speaker system 3-way speaker system

Speaker units

Super Woofer: 17 cm dia., cone type

Woofer: 17 cm dia., cone type

Tweeter: 6 cm dia., cone type

Super tweeter: 2 cm dia., dome type

Nominal impedance

6 ohms

Dimensions

Approx. 240 × 500 × 370 mm

(9 <sup>1</sup>/<sub>2</sub> × 19 <sup>3</sup>/<sub>4</sub> × 14 <sup>5</sup>/<sub>8</sub> inches)

(w/h/d)

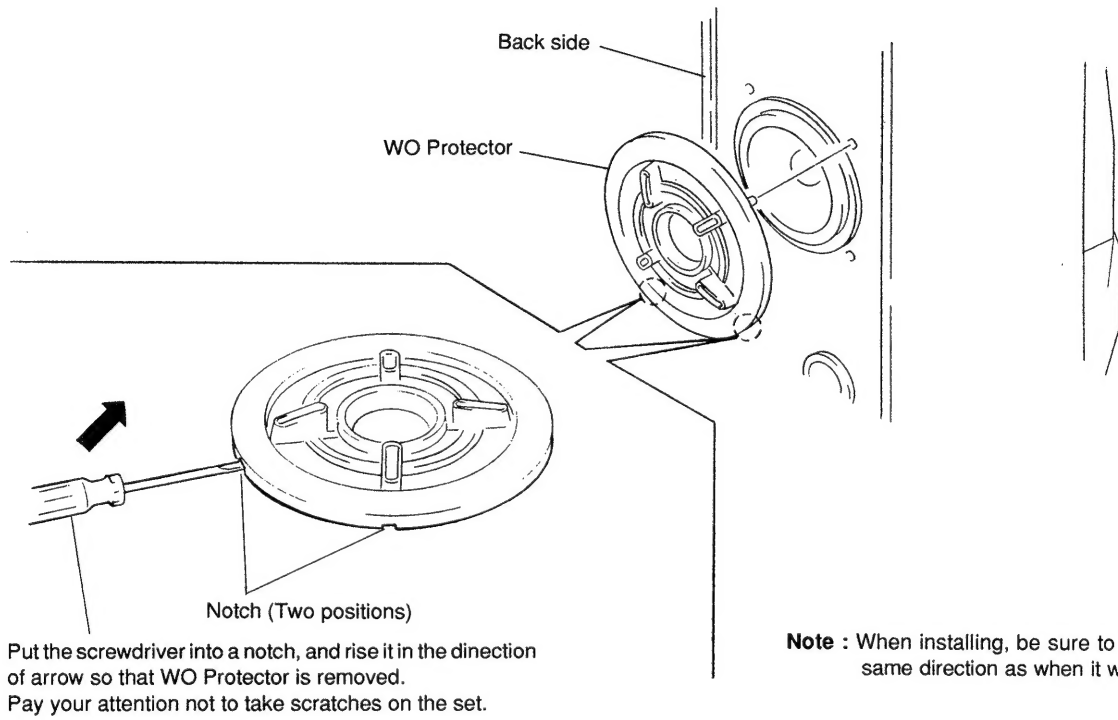
Mass

Approx. 9 kg (19 lb 13 oz.)

Design and specifications are subject to  
change without notice.

**SPEAKER SYSTEM**  
**SONY®**

## NOTE FOR REMOVING WO PROTECTOR



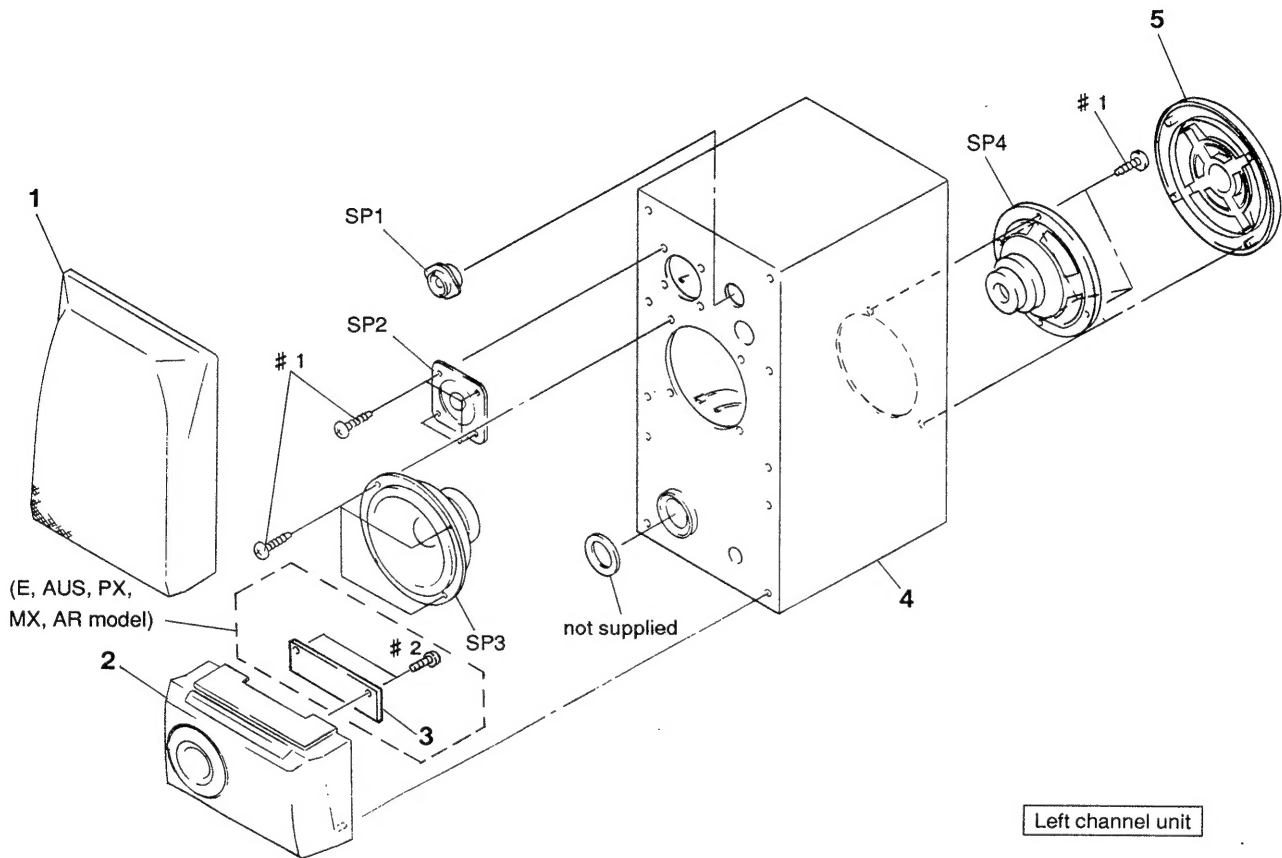
## EXPLODED VIEWS

### NOTE:

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

### • Abbreviation

G : German model  
IT : Italian model  
EE : East European model  
MX : Mexican model  
AUS : Australian model  
AR : Argentine model



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4946-690-1	FRAME ASSY, GRILLE		SP2	1-504-872-11	SPEAKER (6CM) (TWEETER)	
2	X-4946-691-1	PANEL (L) ASSY, DUCT (E, AUS, PX, MX, AR)		SP3	1-505-253-11	SPEAKER (17CM) (WOOFER)	
2	X-4946-692-1	PANEL (R) ASSY, DUCT (E, AUS, PX, MX, AR)		SP4	1-505-252-11	SPEAKER (17CM) (SUPER WOOFER)	
2	X-4947-164-1	PANEL (L) ASSY, DUCT (AEP, UK, G, IT, EE)		*****			
2	X-4947-165-1	PANEL (R) ASSY, DUCT (AEP, UK, G, IT, EE)		ACCESSORIES & PACKING MATERIALS			
* 3	1-589-834-11	MOUNT BOARD (E, AUS, PX, MX, AR)		*****			
* 4	A-4361-894-A	CABINET (L) ASSY, SPEAKER (including SP TERMINAL BOARD) (E, AUS, PX, MX, AR)		1-769-317-11 CORD, SPEAKER (RED/BLACK 2.5m)			
* 4	A-4361-895-A	CABINET (R) ASSY, SPEAKER (including SP TERMINAL BOARD) (E, AUS, PX, MX, AR)		1-775-458-11 CORD, SPEAKER (BLUE/BLACK 2.5m)			
* 4	A-4384-053-A	CABINET (L) ASSY, SPEAKER (including SP TERMINAL BOARD) (AEP, UK, IT, EE)		* 4	4-980-685-01	CUSHION	
* 4	A-4384-054-A	CABINET (R) ASSY, SPEAKER (including SP TERMINAL BOARD) (AEP, UK, IT, EE)		*****			
* 4	A-4384-104-A	CABINET (L) ASSY, SPEAKER (including SP TERMINAL BOARD) (G)		*****			
* 4	A-4384-105-A	CABINET (R) ASSY, SPEAKER (including SP TERMINAL BOARD) (G)		HARDWARE LIST			
5	4-981-069-01	WO PROTECTOR		*****			
SP1	1-504-639-11	SPEAKER (2CM) (SUPER TWEETER)		#1	7-685-162-01	SCREW +P 4X14 TYPE4	
				#2	7-685-536-19	SCREW +BTP 2.6X12 TYPE2 (E, AUS, PX, MX, AR)	

